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ABSTRACT

Studies of the instructional television (ITV) system of El Salvador and its educational reform program for 1972 are summarized. ITV moved into new facilities and the program was increasingly run by native personnel. General ability and reading scores increased, although there was little difference between television and non-television classes. Behavioral objectives were introduced and students showed increased skills of analysis, synthesis and evaluation. Students were enthusiastic about ITV, but teacher enthusiasm waned somewhat after the initial uncritical acceptance. Their attitudes toward their profession as a whole and its attendant problems, however, were poor. Student aspirations were increasingly high, perhaps unrealistically so, but educational reform was working, as evidenced by the percentage of students going on to higher education. An observation study of classrooms was conducted and formative evaluation undertaken, both of which shed light upon the system. (PB)

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TELEVISION AND EDUCATIONAL REFORM IN EL SALVADOR

REPORT ON THE FOURTH YEAR OF RESEARCH

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YOLANDA R. INGLE
ROBERT C. HORNIK
JOHN K. MAYO
EMILE G. McANANY
WILBUR SCHRAMM

RESEARCH REPORT NO. 11

This is one of a series of research reports on the Educational Reform of El Salvador, and especially its use of instructional television. This report has been prepared by members of the Institute for Communication Research, Stanford University, on behalf of the Academy for Educational Development, under contract with the U.S. Agency for International Development.

MAY, 1973

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CONTENTS

	Page
Introduction -- Television Comes to a Seventh Grade Classroom	i
Summary	ii
I. Administrative History of the Year	1
II. Research on Student Learning	16
III. Research on Teacher and Student Attitudes	32
IV. An Observation Study of Two Classrooms	64
V. A Study of Ninth Grade Graduates	104
VI. Formative Evaluation	115
Acknowledgments by the fourth-year Stanford field team	131

INTRODUCTION

Television Comes to a Seventh Grade Classroom

On May 12, the TV set from the Ministry arrived, two months late. The set had been placed in the classroom the night before; the students caught their first glimpse of it as soon as they entered the room. The reactions were varied and enthusiastic. ¡Qué galan! ... ¡Qué chulo!...¡Qué grande!...¡Qué bonito!.... Some students simply stood in front of the set and stared. Others touched it, and one went so far as to put his arms around it lovingly. Another wrote on the board in bold letters, "Do not touch the television set." The rest of the students walked around the room selecting the best seating position to view their first lesson.

- Yolanda Ingle, An Observational Study of Two Classrooms

(for more on this study, see Chapter IV)

SUMMARY

This was a year of transition in El Salvador's Educational Reform. One Five-Year Plan came to an end, and a new one was introduced. A new national administration and a new Minister of Education took office. The Third Cycle curriculum was revised, and the new system with free universal education through the ninth grade was extended throughout the country, with 25 per cent of the entire national budget being devoted to education.

Instructional television moved into excellent new facilities in Santa Tecla, on the outskirts of San Salvador. At the end of the year, it began to operate, for the first time, two VHF channels of its own. Among significant changes in the schools were the introduction of a new procedure for grading and promotion, and a revision of the supervisory system. As the year came to an end, El Salvador prepared to extend ITV into the Second Cycle and into adult education and to offer continuing inservice training with the aid of television to a vast number of primary school teachers -- a system appropriately named Normal Permanente.

In February, 1973, the Stanford field research left El Salvador after four and one-half years, during with the first four school years of the Educational Reform and its instructional television

system have been studied in detail. A report of those four years is scheduled to be completed in the summer of 1973. This volume reports only upon the fourth year -- February to November, 1972.

Research during the fourth year continued with the usual measurements of learning and attitudes, but also introduced a new emphasis on formative, in addition to summative, research and undertook two new projects -- a follow-up study of the graduates of the first class that had received its entire Third Cycle education under the new system, and a close observational study of what happened in two seventh grade classrooms which were receiving television for the first time.

General ability and reading scores, which have been increasing steadily by grade level during the years of the Third Cycle, were sharply higher this year. Learning gains, however, were not too large either for TV or non-TV classes. Television students gained significantly more than non-TV in eighth grade Mathematics and Social Studies ($p < .01$) and approached a similar significant difference in ninth grade Mathematics. Non-TV students gained significantly more than TV in ninth grade Science. New learning tests were made necessary both by extensive curricular revisions and by the use of behavioral objectives, and it is therefore unjustified to compare learning scores in 1972 with those in 1971.

The introduction and wide use of behavioral objectives had a considerable influence on the design of TV lessons and classroom teacher

guides as well as tests. The research team, which participated extensively in the development of the use of behavioral objectives, took advantage of this change to classify objectives and develop test items on the hierarchy of cognitive outcomes represented by the Bloom taxonomy, and thus to sharpen the information available to El Salvador educators on what their schools are teaching and their students learning.

An incidental bonus from the introduction of these new types of tests was an opportunity to check on the developmental hypothesis, derived from Bloom, that a "modernizing" school system tends to move up the hierarchy of cognitive skills from Stage I (memory skills) through Stage II (comprehension and application) to Stage III (analysis, synthesis, and evaluation). Of course, no one-year trial on a small sample of El Salvador students can be a definitive test of such a broad hypothesis, but from the data available it appears that, whether or not the hypothesis works elsewhere, there is considerable doubt that education in El Salvador is developing that way. The most likely interpretation of the data is that Stage III skills are developing before Stage II. One possible explanation for that is the emphasis on lecturing, and the relatively late development of genuine two-way interaction in the classroom, which helps to encourage students to make their own interpretations and applications and work without close supervision.

Teachers' attitudes toward the television system have been falling slowly as the first rosy glow surrounding the new technology

was overtaken by realism. Last year they fell sharply at the time of the long and bitter teachers' strike. It had been hoped that this year the more favorable attitudes exhibited before the strike would reappear. This did not happen. In general, teacher attitudes were no more favorable than in the year of the strike, but on the other hand, the steady decline was halted; levels were about the same as last year. However, this must be seen in perspective. Despite being less favorable than they were in the beginning, teachers were still overwhelmingly favorable to the objectives of the Reform, to the teaching materials they received in the classroom, to the new use of behavioral objectives; and the majority of them wanted at least as much television as they were receiving.

Teacher attitudes toward the teaching profession, and toward their position in it, were not happy ones. They had not been happy in those respects for several years. In 1972, however, for the first time they did not see salaries as their chief professional problem. New problems bulked large: overcrowded classrooms, lack of desks and study materials for students, double shifts in the schools, and the new promotion and grading system which not all the teachers seemed to fully understand. Many of them felt they did not have the necessary training to administer the new system and some viewed it as a threat to student discipline and teacher respect in the classroom.

Because of different forms of testing, it was not possible to

compare student attitudes in 1972 directly with those of previous years. However, the students were still generally favorable to the television system (three-quarters said they felt they learned more with television than they would without it), and they gave high ratings to their workbooks.

No very reliable relationship was found between teacher and student ratings of courses and the amount learned from those courses. Indeed, in the ninth grade the course rated lowest by the teachers, least liked by the students, was the one in which the largest learning gains were made.

A significant finding of the fourth year is that career aspirations, which were very high in the 1970 study of aspirations, were still higher two years later. Young people whose parents, on the average, had not gone beyond primary school, were aspiring generally to higher education and professional careers rather than to the middle-level technical and business jobs the Educational Reform had hoped to fill. Frustration and possible social difficulties may lie ahead when many of these young people find that there are not sufficient places for them either in the universities or the professions.

The follow-up study of 392 ninth grade graduates provides the first hard evidence on what actually happens to students who have had all their Third Cycle education in the new system. In one way the findings are encouraging: a significantly higher proportion of the students who have been educated in the new system than of

those who have come through the traditional classes are enrolled in the career-oriented Bachillerato programs. To this extent, at least, the Reform is moving toward fulfilling its objectives. On the other hand, a considerably higher proportion of students from small towns and villages are neither working nor studying, and only about half of the students were able to continue their education in the same location where they had completed the Third Cycle. Thus, the conditions seem to be set up for a migration of Third Cycle graduates to the bigger towns, cities, and a further overcrowding of urban areas. Over-all, 90 per cent of the students were continuing their education, and half of them were in the academic program leading hopefully to the university.

An extended section is reproduced in this report from the close observation study of two classrooms. This study was made by a bilingual observer, trained as a teacher, using some anthropological and sociological methods. She established a rapport with teachers and students and with many of the students' parents as well, thus obtaining insights into what the Educational Reform meant to individual students, teacher, and classes -- insights that are often covered up in a large sample study. Among the selections reproduced in this report are typical days in a rural and an urban school, as they might be seen through the eyes of a student in each school, and a description of the introduction of television into one of the schools.

This fourth year report concludes with a chapter on the methods of formative evaluation that were in use or developed in 1972. "Feedback" tests of learning, built around the new behavioral objectives and the taxonomy of cognitive skills, were extended widely throughout the Third Cycle curriculum. It was found possible to administer these tests on television and get the summarized results back to ITV officials and production teams within 48 hours. Interesting work was begun with a videotape recorder in pretesting modules of ITV programs, using the distraction techniques employed by the Childrens' Television Workshop on Sesame Street and The Electric Company, along with other tests of appeal and attention, comprehension and achievement.

When the Stanford research team completed its field work in El Salvador, the task of evaluation was institutionalized partly in a newly created Central Evaluation and Research Office in the Planning Division (ODEPOR) of the Ministry of Education, and partly in the Evaluation Section at Educational Television.

I

ADMINISTRATIVE HISTORY OF THE YEAR

The Educational Reform in 1972

This report summarizes the studies on the instructional television system of El Salvador and its Educational Reform program conducted during the 1972 school year. This was the fourth and final year of systematic research and evaluation activities under the supervision of the resident research team from Stanford University.

In contrast to the 1971 school year which was overshadowed by a teachers' strike that seriously disrupted the rhythm of the Reform, 1972 was a relatively normal year characterized by a number of productive changes. It was a year of transition, during which direct foreign advisory participation was reduced and complete responsibility for all aspects of the Reform was assumed by the Salvadoreans. The first five-year plan of the Reform was brought to a close, and a new five-year plan was developed to consolidate the Reform and extend it to other sectors.

The pressure of time which was so characteristic of the previous years spent in initiating and institutionalizing the Reform eased somewhat in 1972. This motivated a concerted effort to improve the quality of the Reform's principal components: teacher retraining, curriculum revision, televised instruction, and classroom supervision. Concomitantly, plans were made to extend the use of instructional television into additional

areas of in-service teacher training, primary education beginning with the fourth grade, non-formal education, and public service broadcasting.

The year 1972 also witnessed the election of a new President for El Salvador -- Coronel Arturo Armando Molina -- and the subsequent appointment of a new Cabinet, which included a new Minister of Education, Dr. Rogelio Sánchez, who replaced Licenciada Antonia Portillo de Galindo and her predecessor, Licenciado Walter Béneke, as the chief education official in El Salvador. The new administration ushered in an ambitious five-year plan of government for El Salvador concerned with social welfare and a desire to combine the use of educational television with the areas of health, agriculture, nutrition and literacy. This concern was reflected in the proposed national budget of El Salvador for 1973, which totaled more than 421 million colones ($168.4 million), of which Education received about 110 million colones ($44 million), or roughly one-fourth of the total budget.

Televised Instruction

The instructional television facility was transferred in February of 1972 from Ciudad Normal in San Andrés to its newly built and excellently equipped studios and offices in Santa Tecla, closer to the capital city of San Salvador. Instructional television also acquired two TV channels of its own at the end of 1972 and officially inaugurated them at the beginning of the 1973 school year. In addition, television was extended to the entire Third Cycle with an estimated audience of about 50,000

Third Cycle students in both private and public school sectors, benefitting from the complete Educational Reform (new curricula, retrained teachers, teacher guides and reference manuals, student workbooks, and daily televised instruction), and about 15,500 students receiving all the services except television.

About 200 new TV receivers were installed in Third Cycle schools, which brought the total number of operating receivers in the public schools to approximately 700 in 1972.

During October of 1972, instructional television was used for the first time in an experimental one-month project to present a series of vocational and career guidance programs. The programs and accompanying printed materials were used with approximately 10,000 ninth grade students terminating their basic nine years of education and about to enter the technical study programs (Bachilleratos Diversificados) in grades 10, 11 and 12, or the labor force.

Within instructional television itself, the staff and personnel participated during a two-month period prior to the beginning of the 1972 school year, in daily training seminars and laboratory exercises on instructional theories of teaching through television. Experimentation continued throughout the year with the use of new instructional-design strategies for the production of the 1972 and 1973 ITV lessons. This experimentation led to the creation of a new position within the instructional television hierachy -- the Director of Educational Broadcast Quality -- which had as its primary function the upgrading of the quality

of televised instruction. U.S. AID advisory personnel in the Instructional Materials Center and the TV Production Division at the television facility and the head of the Stanford field research team contributed to productive changes in the design and organization of the instructional content of the television lessons. Of particular importance were emphasis on the use of behavioral objectives in the TV lessons and the teacher guides and the use of a taxonomy of student learning behaviors.

Procedures for production and studio scheduling also were revamped to permit greater creativity and flexibility in the use of the television facilities. A 950 thousand dollar expenditure on new studio and transmission equipment greatly added to the production capabilities of the existing ETV facilities donated by U.S. AID.

With the advisory assistance of research personnel from the Childrens' Television Workshop ("Sesame Street") in New York and the participation of the Stanford research staff, experimentation also began with the pretesting of individual TV lessons using a portable video tape recorder with small groups of students in the field or in a simulated classroom setting. This experimentation gave an impetus to the development of small televised modules varying in length from one minute to five minutes, which could later be joined together in varied combinations to form the regular twenty-minute television lesson. Each module had its particular set of behavioral objectives, which facilitated a pretesting procedure to measure the module's teaching effectiveness and

the degree to which children were attracted to the visual elements of the program and comprehended the instructional content. Areas in need of revision could be pinpointed with much more accuracy, independently of the other modules comprising the lesson.

The expectation is that over a period of time, the module approach will prove to be not only a more creative way of producing a TV lesson, but also a more economical one. Instead of retaping specified 20-minute lessons in their entirety, only those modules or segments of the lesson whose teaching effectiveness or visual appeal is below a specified level, or which have become outdated, would need to be redone. Tested modules could be repeated, interchanged among the various subjects, or joined in a variety of ways to produce new teaching segments, without the added expense of retaping entire programs. Eventually, a library of empirically validated teaching modules would become available and markedly reduce the yearly amount of retaping, which is costly and time-consuming. More time and effort could be concentrated on producing a smaller percentage of new segments.

Curriculum

During the latter part of 1971 and the beginning of 1972, a thorough revision of the new Third Cycle curricula, which had been under trial in the classrooms for several years, was undertaken. New official publications incorporating the revised curricula for English, Spanish, Social Science, Mathematics, and Social Studies were published and disseminated to the teachers in February of 1972. Included in the revised curricula

were teaching units on sex education, social diseases, and ecology, and there was an added emphasis on personal hygiene, health and nutrition.

Revision of the curricula for the diversified technical-vocational careers in the Bachillerato Diversificado also was begun, and the development and writing of the curricula for the newest of the Bachilleratos (Health, Hotel Management and Tourism, and Gaming and Fishing) also were started.

Research Program

Research in 1972 emphasized a formative approach, with attention being given to pretesting television lessons and designing teaching modules; expanding the televised feedback system to other grade levels and subjects; developing of criterion-referenced testing; and utilizing behavioral objectives and a taxonomy of student learning abilities in both the design and the evaluation of televised instruction.

A special concern of the research program in the fourth year, therefore, was providing quick and specific information for solving the day-to-day problems of improving the quality of televised lessons and accompanying classroom teaching materials.

The taxonomy of objectives by Bloom, et al., (1956), and Krathwohl (1964), as well as Mager's book on behavioral objectives (1962) were particularly useful in guiding this formative research approach. Bloom and his associates have outlined six categories of hierarchical skills or behaviors in the cognitive domain: knowledge, comprehension, application, analysis, synthesis, and evaluation. There is also a taxonomy of the

affective domain developed by Krathwohl and his associates. Up to this time, however, the research program in El Salvdaor has been concerned primarily with the cognitive domain and exploring other systems for classifying the structure of the subject-matter in terms of student performance objectives, e.g., Gagné, Bruner, Guilford, Taba and Glaser.

Under the supervision of the Stanford research team, the newly revised national curricula for grades 7, 8, and 9 in the Math, Science, and Social Studies were analyzed for cognitive student learning behaviors. The objective was to ascertain the types of skills or behaviors being emphasized within each content-area, subject matter, and grade level.

This analysis became the interpretative framework for the development of individual tele-lessons, which reflected both the informational content of the curricula and the specific information-processing abilities based on the learning taxonomy. Instead of creating TV lessons based on themes or general goals, the TV production teams endeavored to specify concretely what the student should be able to do as a result of the 20-minute televised portion and the 4-minute period of follow-up classroom activities.

The specification of objectives permitted the development of the new student learning tests, which were administered for the first time in 1972 in Math, Science, and Social Studies for the 7th, 8th and 9th grades.

In combination with the usual battery of general ability, reading and attitudinal measures, which are now a standard part of the research

program, the analysis of these new learning tests permit a more detailed examination of the types of abilities which the students of El Salvador are learning under the use of television and the Educational Reform program.

The analysis of these tests takes into consideration not only how many test items the student answers correctly (and consequently how his score compares with some norm) but also the specific types of items, at different levels of the Bloom taxonomy, the student can answer. One can, therefore, begin to determine not only who learns more or less of a given subject matter, but also the extent to which different students are mastering the hierarchy of information processing skills underlying the subject matter.

The tests also make it possible to test, at least in an approximate way, a hypothesis derived from Bloom's taxonomy, that a modernizing school develops along the rising steps of the taxonomic hierarchy. This is treated in Chapter II.

Two special research projects also were undertaken in the course of the year. The first was a year-long detailed observational study of two seventh grade classes, one in a rural and one in an urban community, which were using television for the first time. A sociological-anthropological approach was used to find out how television and the Reform affected the in and out-of-the classroom lives of a group of children, their teachers and their parents.

The second was a follow-up interview study with a sample of about 400 students who graduated in November, 1971 -- the first group of

students in El Salvador who had spent three full years in the new Reform system. The objective of the study was to find out what happened to their career and educational plans, and what role they thought ITV and the Educational Reform had played in their lives.

The Stanford resident research team left El Salvador in February, 1973. The functions of research and evaluation have been institutionalized both in the Evaluation Section at Educational Television and a newly created Central Evaluation and Research Office in the Planning Division (ODEPOR) of the Ministry of Education. Key Salvadoran personnel that previously were employed by the Stanford research offices in El Salvador transferred to both of these evaluation entities and thereby provided a bridge for continuation of the research and evaluation component of the Educational Reform program.

Teacher Education

Official figures released by the Ministry of Education of El Salvador indicate that, during the 1972 school year 230 Third Cycle teachers participated in the full-time, one-year retraining program. This group brought the total of Third Cycle teachers who have been trained to roughly 1,000.

During 1972, also, the national teacher training school (Ciudad Normal Alberto Masferrer) in San Andrés profited from the advisory services of a specialist in educational administration (provided by U.S. AID) who helped in restructuring and streamlining the existing academic departments of the school and participated in developing and publishing a course catalog and time schedule of existing and future

course offerings.

Development of a research and methodology unit began as part of the Educational Sciences academic department at Ciudad Normal, and weekly workshops in evaluation and research techniques were undertaken by Ciudad Normal's teaching and administrative staff with the cooperation of the advisor in test and measurements at the Ministry of Education and the Stanford research staff. As part of their daily teaching schedule, teachers at the Normal School were encouraged to undertake research activities with their student and include short units on research and evaluation in their lectures and class presentations.

Over 40 school directors and 30 administrators also participated in training at the Normal School in 1972 along with about 50 field supervisors (Supervisores Docentes). A group of about 100 students continued their second year of pre-service training destined to make them full-fledged primary school teachers by the end of 1973 under the program of Bachillerato Pedagógico. Miscellaneous training in library science, family planning, music and physical education also was undertaken with a total of about 350 students profiting from this training. The total enrollment of the Ciudad Normal in 1972 (both short and long-term courses) was about 800 classroom teachers, administrative support staff, directors, and supervisors.

Toward the beginning of 1973, Ciudad Normal also became the permanent home for the newest venture in teacher in-service training -- the Normal Permanente. In cooperation with a national commission of dis-

tinguished educators appointed by the Ministry of Education, and with personnel from Ciudad Normal and Instructional Television, planning was begun for the use of television for the in-service training of some 15,000 primary school teachers. This is the Normal Permanente. The objective is to keep classroom teachers up-to-date on the latest development in pedagogical techniques and subject matter innovations. A U.S. AID advisor assigned to the Normal Permanente worked with television personnel and the national commission throughout 1972 in structuring and defining the curriculum for this proposed teacher training experiment. After a series of delays it is now scheduled to begin its first Saturday morning transmissions in mid-1973.

Student Grading and Promotion System

During the year, a new student evaluation system (Promoción Orientada), was implemented to change promotion and grading policies in the schools. The new system was developed by the evaluation unit of the Curriculum Division (Servicios Técnicos-Pedagógicos) in cooperation with the Supervision Division (Supervisión Escolar) of the Ministry. The supervisors are endeavoring to provide for classroom teachers the necessary field training to interpret and utilize the new policies.

The new system emphasizes a continuous, systematic and varied evaluation of the student throughout his entire nine years of basic education on all types of learning activities. The previous promotion system had been based on an end-of-the-year written examination, which was used to decide whether the student passed or failed the school year.

The exam was heavily oriented toward memory, and a high percentage of students generally failed the exam and had to repeat the school year. This end-of-year, "do-or-die" exam is to give way to a series of short tests and observation activities undertaken throughout each teaching unit by the classroom teacher.

Only in the extreme cases of continued periods of long absenteeism or very poor academic performance throughout the school year is the student not promoted. The success of the new promotion system depends to a large extent on the concentric nature of the new curricula in which each successive grade level reviews and expands the material and skills taught at the previous grade level and tries to provide developmental learning bridges for the child.

The promotion system is still in the preliminary stages of an innovation and is experiencing the kind of resistance which accompanies major changes in educational policies. Teachers have voiced the opinion that with the new promotion system, students lose the incentive to study, knowing full well that they will be promoted to the next grade. Teachers also sense a lack of preparation in their own background for utilizing the new evaluation and grading techniques. Also lacking is the appropriate psychological predisposition on both the part of the teacher and the student to fully cope with the freedom, flexibility and individual responsibility which the new system implies. The situation is made more difficult by the lack of books and adequate reference and teaching materials in the schools, and by unprecedented

school enrollments which have increased the average pupil to teacher ratio by at least 20%, and required teachers to handle two complete school sessions a day - one in the morning, one in the afternoon.

Classroom Supervision

Supervision of teachers in the classroom also underwent some changes in an effort to elevate the professional competencies of the supervisors and to provide classroom teachers with better guidance in resolving daily classroom teaching difficulties and implementing new policies of the Reform.

The schools were grouped into small clusters in neighboring zones of the country. This grouping requires supervisors to oversee fewer schools and to travel less between schools. Under the new arrangement, supervisors found it easier to concentrate their efforts on the pedagogical problems of classroom teachers. They were further aided in this by a reduction in the amount of administrative paperwork required of them. A team-supervision approach between supervisors and school directors was also introduced. Each director in a cluster of schools developed a particular pedagogical speciality which he then imparted to the teachers of his cluster-zone, in half-day workshops once a month. These workshops were reinforced by periodic consultations between directors and supervisors with representative classroom teachers attending each session.

More than 15,000 teachers in Grades 1-6 and some 600 teachers in Grades 7-9 received in-service training workshops from their

respective supervisors, during 1972, on the new student promotion and grading system, the organization of lesson plans, the use of behavioral objectives, the interpretation of the revised curricula, and instructional materials.

Although less of a problem in 1972, the lack of adequate transportation to travel to the outlying schools and the administrative, paper-work responsibility continue to plague supervisory services in El Salvador.

Administrative Concerns

The completion of the first five-year plan of the Educational Reform in 1972 has pushed Salvadoran administrative leaders and advisory personnel associated with the project over the past years into a mood of self-questioning and a consideration of the lessons learned since the initiation of the Reform in 1968. A principal concern is that of defining the precise role that instructional television has played in El Salvador and what its future role and costs may be.

A certain amount of discussion over 1972 and in to 1973 has argued for a thorough sectoral analysis of education and socio-economic consequences of the many changes wrought by the old five-year plan and those proposed for the next five years. These discussions have focused on the need to align the educational system more closely with the known manpower, economic and population needs and developments of the country. The objective is to provide viable options that can

lower the cost of education, maximize its quality, and extend it to an increasing number of students inside and outside the formal school system.

This brief overview of the 1972 school year suggests that change and experimentation were important characteristics of the Educational Reform in El Salvador during this period. The subsequent chapters outline some of the effects these various changes have had on the Educational Reform program and their possible implications for the future of ITV in El Salvador.

II

STUDENT LEARNING

The 1972 testing program was concentrated in the eighth and ninth grades of the Third Cycle. The battery of written achievement tests was administered at the beginning (March) and the end (November) of the school year to a random sample of 23 eighth grade classes (five of which were not using television, and henceforth are designated Control or Non-TV)*, and 29 ninth grade classes (11 of which were Control) in 25 public schools throughout the country. The tests included measures of general student ability, reading level, and cognitive learning from television and the new curricula.

A complete set of learning data already existed from two previous samples of seventh graders tested throughout their three years of Third Cycle. For this reason, a new seventh grade sample was not included in the 1972 testing program. A small sample of seventh graders, however, did participate throughout 1972 in the special classroom observation study, which is highlighted in Chapter IV and is the subject of a forthcoming technical report. Discussion

* To review definitions, non-television or control classes used all elements of the Reform system except television. In other words, they had student workbooks, teacher guides, used the new curricula and were taught by retrained teachers. Television classes had all of these elements plus the use of the TV broadcasts.

of the learning data collected from these seventh graders has been reserved for that report.

The eighth and ninth grade sample totaled 1,771 students, of whom 623 were in ninth grade classes using TV and 331 were in control or non-television classrooms. In the eighth grade, 645 students were in the TV classrooms, and 172 were in the control condition. The sample represented the various levels of urbanism found in the country and included both urban and rural schools with about an equal distribution between male and female students.

These eighth and ninth graders represented the last group of students systematically tested since the beginning of the research program in 1969. That is, the ninth graders are the seventh graders of 1970, and the eighth graders represent the seventh graders of 1971, who are scheduled to finish their Third Cycle studies in November of 1973. The seventh graders of 1969 graduated as ninth graders in 1971, and are the subject of the follow-up study reported in Chapter V. By the end of 1973, a full set of data gathered over a three-year period will be available on at least two of these seventh grade groups (the 1969 and the 1970).

The following pages report the findings on the battery of learning measures administered at the beginning and the end of the 1972 school year. Particular attention has been given to the analysis of the new cognitive learning tests based on the curricular revisions, the use of behavioral objectives, and the taxonomical hierarchy of cognitive learning stages described in Chapter I.

General Ability and Reading Scores for 1972

A detailed comparative study of general ability and reading scores during the period of the study is presently under way, and will be given special attention in the final report of project research, scheduled for summer 1973. By way of preview, however, it can be reported that preliminary examination of the 1972 scores indicates sharp gains over previous years of the testing program, and that the results consistently favor the TV students. It must be remembered that the TV and non-TV samples are approximately equal in general ability and reading when they enter the seventh grade. These scores rise each year, but seem to rise faster for the TV students than for others. Summary scores for 1972 are in Table I.

New Learning Tests

The new learning tests represent an exploratory attempt to look in greater depth at the types of learning behavior which instructional television and the other elements of Educational Reform are teaching the students of El Salvador.

In the following pages, learning scores are reported first in the same manner as in previous annual reports of research. That is, means for each of the three subject areas (Mathematics, Science, Social Studies) are presented and comparisons between beginning and end of year results are made for TV and non-TV students. Then the chapter examines the specific types of test items students were able to answer based on the taxonomy of behavioral objectives used to

TABLE 1

Mean Scores on General Ability and Reading Tests, TV and Non-TV Students, 8th and 9th Grades, 1972

General Ability			
8th Grade (N=817)		9th Grade (N=954)	
TV Students (N=645)	68	TV Students (N=623)	83
Non-TV Students (N=172)	60	Non-TV Students (N=331)	73
Reading			
TV Students (N=645)	45	TV Students (N=623)	57
Non-TV Students (N=172)	42	Non-TV Students (N=331)	51

develop the televised lessons and the tests.

The results of this analysis must be considered tentative. The tests represent an attempt to study a complex set of variables in a field research setting. They were constructed under limited time conditions, without adequate pretesting, to meet the deadlines of the 1972 school year which started just two months after curriculum changes were handed down to the production and the research teams. One must also recognize the difficulties of applying the cognitive levels outlined by Bloom and his associates. Categorizing behavioral objectives and test items under one or another of the taxonomic levels requires delicate decisions on some of which theorists and practitioners might find themselves in occasional disagreement. However, the new tests represent a potentially useful innovation for the El Salvador schools and deserve continued revision, adaptation, and experimentation.

Learning Gains: Television vs. Non-Television Classes

Mean gains between beginning-of-year and end-of-year tests were not large either for television or non-television classes. These scores are presented in Table 2.

In both Mathematics and Social Science, in both eighth and ninth grades, the TV classes gained more than the non-TV, but the differences were significant (at the .01 level) only in eighth grade Mathematics and Social Studies. They approached significance in ninth grade Mathematics, but were very slight in ninth grade Social Studies. In Science, on the other hand, there was very little gain in either type

TABLE 2

Mean Pretest and Posttest Scores and Gains on Learning Tests, by Grade Level, TV or Non-TV Instruction, and Subject, 1972

	8th Grade (N=817)								
	Mathematics			Science			Social Studies		
	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
TV Students (N=645)	16.65	19.90	+3.25*	22.52	22.59	+0.07	23.57	28.62	+5.05*
Non-TV Students (N=172)	16.56	17.85	+1.29*	20.78	21.23	+0.43	22.30	25.68	+3.38*
	9th Grade (N=954)								
	Mathematics			Science			Social Studies		
	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
TV Students (N=623)	18.45	23.41	+4.96	25.91	28.70	+2.79*	25.65	26.76	+1.11
Non-TV Students (N=331)	17.69	20.83	+3.74	22.93	27.83	+4.95*	23.83	24.85	+1.02

* Difference between gains of TV and Non-TV students significant at the level $p < .01$

of class in the eighth grade, but in the ninth grade the non-TV students gained significantly more (.01).

Comparisons between results of learning tests in 1972 and those in 1971 cannot be made in good conscience because of the curriculum changes and the extensive use in the latter year of specific behavioral objectives. Both of these changes required new and different test items. In specifying the objectives and making the new tests, special attention was given to representing different cognitive levels on the Bloom taxonomy, and this contributed to further difference between the new and the older tests.

Furthermore, the 1971 tests were administered under the shadow and in the aftermath of a teachers' strike which significantly affected student performance. Thus, it would not be entirely surprising -- if the same tests had been given and the curriculum were unchanged -- to find that both TV and non-TV learning scores in 1972 were higher than in 1971. This is precisely what is shown in Table 3, but, unfortunately, as we have said, we cannot be sure whether these raw scores are measuring a true difference in performance or a change in curriculum, objectives, and tests.

Taxonomic Analysis of Student Learning Behaviors

The categories of learning being considered in this more detailed analysis of the 1972 scores, as we have said, represent the six levels of the cognitive taxonomy developed by Bloom, et al., (1956): knowledge, comprehension, application, analysis, synthesis, and evaluation.

TABLE 3

Comparison of Pretest and Posttest Results and Gains on Learning Tests, on Learning Tests, 1971 and 1972, Eighth and Ninth Grades

	Mathematics			Science			Social Studies		
	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
1971 -- 8th Grade									
TV Students	13.48	15.68	+2.20	22.00	24.53	+2.53	22.64	25.61	+2.99
Non-TV Students	13.02	15.15	+2.13	20.03	23.03	+3.00	19.78	22.76	+2.98
1972 -- 8th Grade									
TV Students	16.65	19.90	+3.25	22.52	22.59	+0.07	23.57	28.62	+5.05
Non-TV Students	16.56	17.85	+1.29	20.78	21.23	+0.45	22.30	25.68	+3.38
1971 -- 9th Grade									
TV Students	15.58	18.16	+2.57	21.31	23.21	+1.90	20.53	21.55	+1.02
Non-TV Students	15.25	15.42	+0.17	17.86	19.65	+1.79	18.35	21.45	+3.10
1972 -- 9th Grade									
TV Students	18.45	23.41	+4.96	25.91	28.70	+2.79	25.65	26.76	+1.11
Non-TV Students	17.69	20.83	+3.74	22.93	27.83	+4.95	23.83	24.85	+1.02

The analysis seeks to determine the extent to which students are learning the hierarchy of cognitive learning behaviors underlying each subject matter and the general objectives of the Reform. For this purpose, individual responses to each of the 60 items in each of the new Mathematics, Science and Social Studies, pre and post tests for the eighth and ninth grades, were analyzed from a random stratified sub-sample of students. The sample consists of 264 students from the eighth grade TV classes (60 of which were in control classes), and 313 students from the 9th grade TV classes (113 of which were in control classes).

Items were divided into three classes, parallel to the developmental hypothesis of educational change suggested in Chapter I: that as a school system "modernizes" it passes through Stage I -- Traditional, simple knowledge or memory learning skills; Stage II -- Transitional, skills involving comprehension and application of learning content; and Stage III -- Modern, reasoning skills based on the ability to analyze, synthesize and evaluate the worth of varied types of informational content.

This hypothesis, based on Bloom, et al., can be illustrated by Figure 1.

Tables 4 and 5 give the learning results against which to view Figure 1. These tables show less difference than one might expect by subjects and types in the eighth grade, although it appears that the gains in the eighth grade Mathematics are concentrated on the

FIGURE 1

Evaluation System Based on Behavioral Objectives

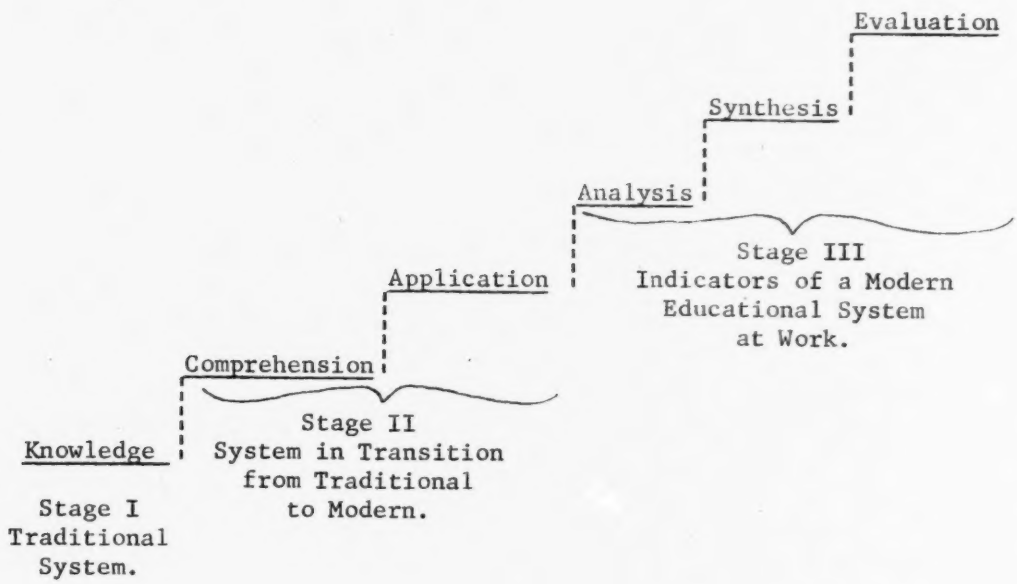


TABLE 4

Percentage of Items Answered Correctly, by Type of Item and Subject, and by TV and Non-TV Students, Eighth Grade, 1972

	Math (14 items)			Science (17 items)			Social Studies (27 items)		
Type I -- Memory Items	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Non-TV Students (N=61)	24%	31%	+7%	40%	50%	+10%	39%	46%	+7%
TV Students (N=203)	25	31	+6	46	53	+7	44	51	+7
Both (N=264)	25	31	+6	45	52	+7	43	50	+7

	Math (26 items)			Science (21 items)			Social Studies (10 items)		
Type II -- Comprehension, Application Items	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Non-TV Students (Ns same as above)	28%	30%	+2%	27%	35%	+8%	35%	44%	+9%
TV Students	29	30	+1	30	35	+5	36	45	+9
Both	29	30	+1	30	35	+5	35	44	+9

	Math (20 items)			Science (22 items)			Social Studies (23 items)		
Type III -- Analysis, Synthesis, Evaluation Items	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Non-TV Students	30%	33%	+3%	26%	33%	+7%	33%	42%	+9%
TV Students	33	36	+3	32	37	+5	38	45	+7
Both	31	34	+3	30	36	+6	37	44	+7

TABLE 5

Percentage of Items Answered Correctly, by Type of Item and Subject, and by TV and Non-TV Students, Ninth Grade, 1972

	Math (24 items)			Science (23 items)			Social Studies (26 items)		
Type I -- Memory Items	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Non-TV Students (N=113)	35%	45%	+10%	49%	63%	+14%	36%	46%	+10%
TV Students (N=200)	38	49	+11	52	63	+11	37	48	+11
Both (N=313)	37	47	+10	51	63	+12	37	47	+10
Type II -- Comprehension, Application Items	Math (24 items)			Science (22 items)			Social Studies (14 items)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Non-TV Students (Ns same as above)	27%	33%	+6%	35%	43%	+8%	33%	38%	+5%
TV Students	28	38	+9	36	43	+7	33	39	+6
Both	28	35	+7	35	43	+8	33	39	+6
Type III -- Analysis, Synthesis, Evaluation Items	Math (12 items)			Science (15 items)			Social Studies (20 items)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Non-TV Students	34%	45%	+11%	39%	51%	+12%	38%	47%	+9%
TV Students	32	45	+13	42	53	+11	39	48	+9
Both	33	44	+11	41	52	+11	39	47	+8

memory items rather than the others. In the ninth grade, however, there is a general pattern of higher gains in Type I and Type III items than in Type II, and the same pattern is seen in both the pre and the post scores. The eighth grade pattern is not so clear as the ninth in the pre and post scores, although it seems that students' over-all scores are notably higher on memory items than on either of the others, and that Mathematics scores are relatively flat over the three types, with a slight advantage for Type III. Thus, so far as these results are interpretable, they seem to indicate that the eighth grade shows higher performance for memory (Type I) items than for the others (with a slight suggestion in one subject of higher scores for Type III), whereas the ninth grade shows a general pattern of higher performance in Type I and III than for II.

We must be careful not to overinterpret these results. The real usefulness of item-analysis by cognitive types will be as guidance to the teachers and the curriculum makers. In using them to test a theoretical hypothesis, it is necessary to recall that the sample (particularly the non-TV sample in the eighth grade) is small, that the tests were constructed under considerable time pressure, and not fully pre-tested, and that results in El Salvador may not be generalizable to other countries. But insofar as these results can be used as a guide, they leave a number of questions as to whether the logical picture of school modernization derived from Bloom is what is actually happening.

If a school system were in what is called the "Traditional" stage, we should expect high test performance on Type I (memory) items, lower performance on other types. In a "Transitional" stage, we should expect high performance on both Types I and II, and in a "Modern" stage, high performance on all three types. The Science and Social Studies over-all scores in the eighth grade come close to fitting the "Traditional" pattern. The ninth grade, however, does not fit any of these patterns; it seems to suggest that skill in Type III cognitive processes may be developing before Type II, and there is at least a suggestion of this also in eight grade Mathematics.

Observational evidence indicates that El Salvador schools are in a "Transitional" stage. For example, the 1970 study of teacher performance, conducted by Judith Mayo using measures derived from Beeby's analysis of educational development, shows teachers beginning to rely less on lecturing or rote drill, more on student activity; asking more "thought" questions (questions with more than one possible correct answer), encouraging students to ask their own questions, state their opinions, work on individual projects. These are all characteristics of what we should call "modern" education, but were observed infrequently enough to indicate that the system is moving <u>toward</u> a modern style but has not yet achieved it.

But if the schools of El Salvador are indeed in a transitional stage (which would lead us to expect high performance on Type I items, and at least rising performance on Type II, and considerably lower performance on Type III), we do not find what we should expect.

In two subjects in the eighth grade, we find a rather traditional pattern -- high on Type I items, lower on II and III. In the ninth grade, we find a curvilinear pattern -- high on I and III, lower on II -- and at least a suggestion of that in one of the eighth grade subjects.

Therefore, whether or not a modernizing school typically climbs in a logical and orderly manner up the Bloom taxonomy, this does not seem to be happening in El Salvador. The question must be raised whether, in a school system like that of El Salvador, development in Type III skills may not precede development in Type II. If so, then a possible explanation is the heavy emphasis on lecturing, both in the classroom and on television. As the teachers develop beyond the stage of being able to conduct drill (Type I), they apparently have learned in their teacher training schools to teach as they have been taught there, chiefly by lecture. This emphasizes the skills of Type III. Only after that do they come to emphasize the two-way exchange in the classroom, the reliance on students to state meanings in their own words and apply them to problems outside the test, which would contribute to the skills of Type II.

This is a counter-hypothesis to be tested in the future. It is not a refutation of the Bloom schema. But it strongly suggests that there may be different patterns of educational development in different systems and cultures, and we hope that El Salvador will continue to

examine its learning scores by type of item and thus shed additional light on how the process of school modernization actually affects learning.

III

RESEARCH ON TEACHER AND STUDENT ATTITUDES

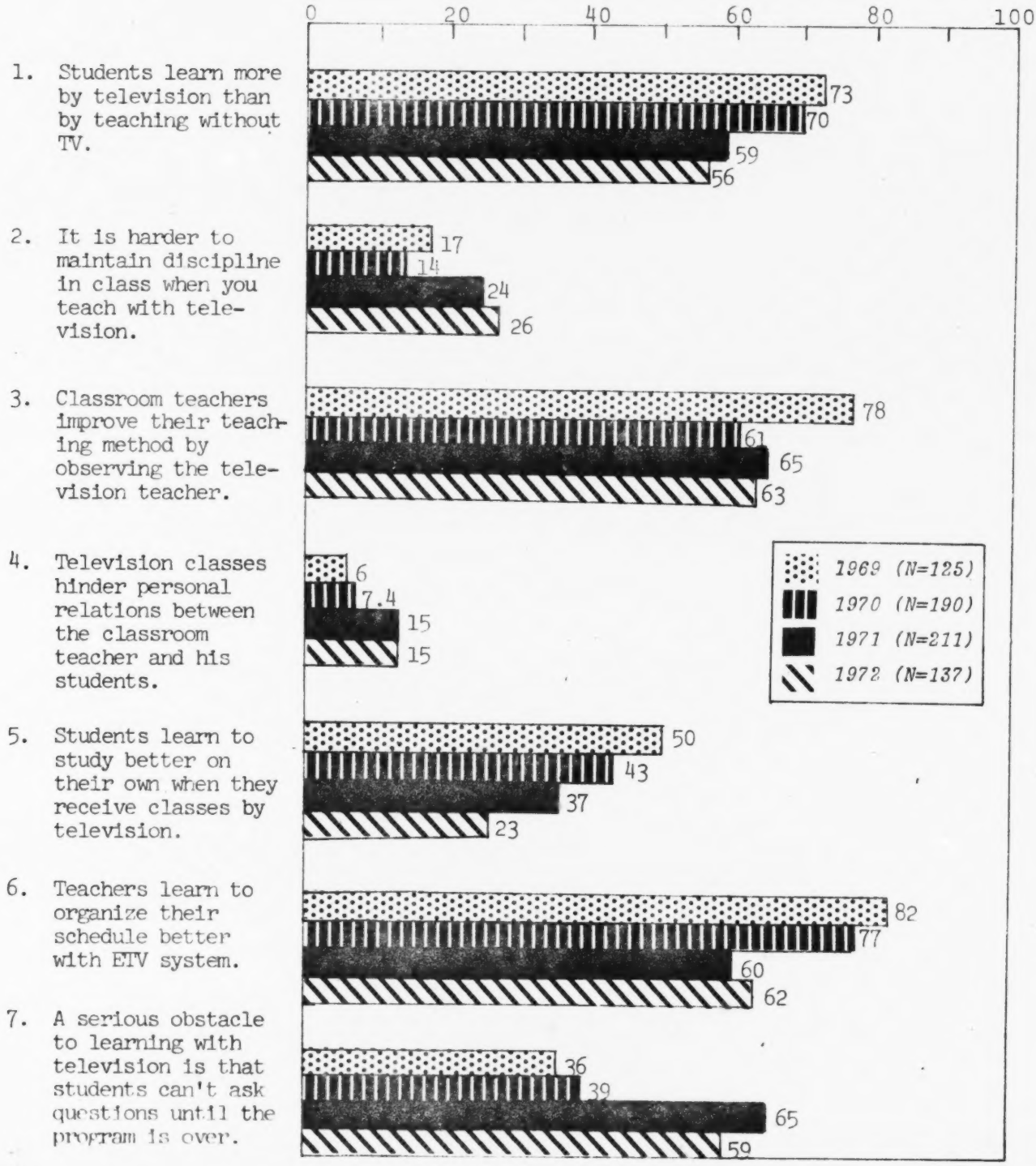
General Attitudes of Teachers

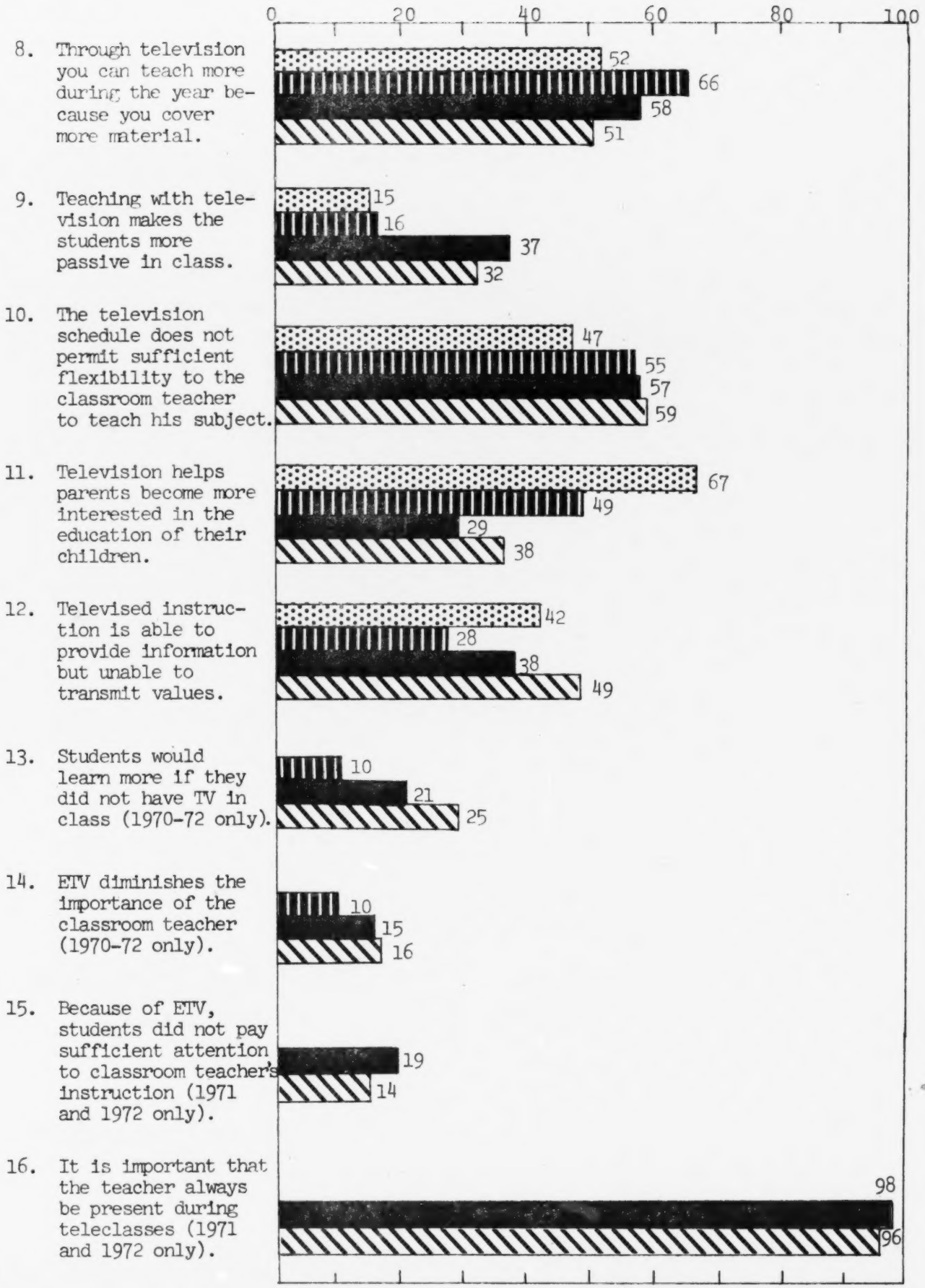
During the third year of research on the Educational Reform in El Salvador, after a long and bitter teachers' strike, attitudes of teachers toward the instructional television system became sharply less favorable. This was explained by most observers as generalized dissatisfaction and hostility lingering from the strike, but it was also noted that ITV had become at least a minor issue during the strike; classroom teachers had argued that the money being put into television should be used to raise their salaries. Therefore, the measurements of teacher attitudes made at the end of the fourth year, in early November of 1972, were awaited with more than usual interest. Were the teacher attitudes still negative, or had they returned to the previous level of favorableness displayed before the strike?

The results indicate that the old positive attitudes have not returned.

Figure 2 shows what has happened to these attitudes during the four years. Over-all, teachers' attitudes in 1972 were about the same as those in 1971. Some responses were higher, some lower; they tended to balance each other. During the four years of the Reform,

Figure 2
Comparison of Classroom Teacher Attitudes Toward ETV:
1969, 1970, 1971, and 1972
Percentage Agreement with Statements about ETV




0
20
40
60
80
100
8. Through television you can teach more during the year because you cover more material.
52
66
58
51
9. Teaching with television makes the students more passive in class.
15
16
37
32
10. The television schedule does not permit sufficient flexibility to the classroom teacher to teach his subject.
47
55
57
59
11. Television helps parents become more interested in the education of their children.
67
49
29
38
12. Televised instruction is able to provide information but unable to transmit values.
42
28
38
49
13. Students would learn more if they did not have TV in class (1970-72 only).
10
21
25
14. ETV diminishes the importance of the classroom teacher (1970-72 only).
10
15
16
15. Because of ETV, students did not pay sufficient attention to classroom teacher's instruction (1971 and 1972 only).
19
14
16. It is important that the teacher always be present during teleclasses (1971 and 1972 only).
98
96

teachers' attitudes have become generally less favorable, and therefore, it is somewhat encouraging that the curve did not dip any lower in 1972. The decline in positive evaluation of the Reform and ITV was halted in that year, and some responses were more favorable than in 1971.

What the teachers have to say about television must be seen in perspective. They have become progressively less inclined to believe that students learn more with television than without it (see the first response), but even in 1972 more than half of them still believed that students do learn more if they have television in the classroom. Sixty-three per cent of them still believe that classroom teachers improve their teaching by watching the teleteachers. Only 15 per cent believe that ITV gets in the way of personal relation between a student and the classroom teacher. Teachers are less worried in 1972 than in 1971 about the possibility that television will make the student passive, or that it will diminish the importance of the classroom teacher, or that, because of ITV, students will pay too little attention to the classroom teacher's instructions.

Perhaps the best way to sum up the results is to note that some of the "rosy glow" that television cast over classroom teachers in its first year in El Salvador has faded out, but nevertheless, attitudes remain predominantly favorable to the use of ITV. Thus, fewer teachers than in 1969 believe that ITV helps teachers organize their schedules better, but 62 per cent of the teachers still believe that

it does help them in that way. More teachers than in previous years believe that students would increase their learning if they did not have television in the classroom, but 75 per cent still do not believe that. In one respect the decline has been steady and constant from the first year through the fourth: teachers seem progressively to have lost faith that students might learn to study better on their own because of television. On the other hand, the 1972 response was almost exactly the same as the 1969 response to the statement that television helps a teacher cover more material; just over half the teachers agreed.

Four additional attitude statements were presented to teachers for the first time in 1972. These were the percentages of agreement:

	Agree
1. Instructional television damages students' eyes.	35%
2. The pedagogical quality of the teleclasses has improved this year.	57%
3. The supporting materials that the Ministry provides to the teachers are helpful in classroom work.	87%
4. The new focus on behavioral objectives in the guides and teleclasses helps the classroom teacher in better utilizing television.	83%

The last three responses should be very encouraging to the Ministry, particularly because the emphasis in the fourth year was on writing teacher guides and preparing teleclasses in terms of behavioral objectives.

This change was undertaken by the TV production teams partly in response to criticism voiced against certain subjects in the previous broadcast year.

It is a bit disappointing that the old idea of television damaging its viewers' eyes, so often denied by experts and never really supported by evidence, should be held by so many teachers. But as we shall see later in this chapter, the same belief is held by more than half the students, and it is apparently wide-spread in El Salvador.

Along with teacher attitudes toward television we should look at their attitudes toward their jobs and their profession. These attitudes are reflected in the six following tables, and it may prove useful to look at all these tables together, and then talk about what they mean.

Obviously, these are not, for the most part, very happy teachers. In two years, the percentage of teachers who feel that "teaching is not a profession that gives much satisfaction" has doubled. Only 16 per cent feel that "teachers are highly respected in El Salvador." Only 20 per cent (the same as two years ago, but higher than in the year of the strike) would encourage their best students to become teachers. Only one-third say they would stay in teaching if offered a better paying job.

On the other hand, teachers are quite positive about the basic ideas of the Educational Reform. Ninety-four per cent agree that all

TABLE 6

Teacher Agreement with Statements about Teaching and Education in El Salvador: 1970, 1971, 1972

Statements	Classroom Teachers (1970) N=190	(1971) N=213	(1972) N=137
1. Teaching is not a profession that gives much satisfaction.	18%	27%	37%
2. All young people ought to have the opportunity to finish Plan Básico.	98%	97%	94%
3. The increase in enrollment decreases the quality of secondary education.	36%	55%	55%
4. The fundamental goal of education is the formation of a child's character.	71%	74%	58%
5. I would encourage my best students to become teachers.	20%	13%	20%
6. Only the best students should study beyond primary.	4%	8%	7%
7. Teachers are highly respected in El Salvador.	18%	13%	16%
8. The majority of Plan Básico students are not very interested in learning.	29%	33%	46%
9. I would stay in teaching even if I were offered a better paying job.	45%	33%	34%
10. Many students lack respect for their teachers.	48%	43%	65%
11. The most important goal of education is the development of reasoning ability.	68%	72%	54%
12. The great majority of students are motivated to take advantage of their education in Plan Básico.	71%	47%	34%
13. The Educational Reform is leading toward a high quality of education in the Plan Básico.	48%	53%	46%

TABLE 7

Teacher Agreement with Statements about Teaching and Education in El Salvador -- New Statements Presented for First Time in 1972 (N = 213)

	Statements	Percentage of Teachers in Agreement
14.	The new curricula of Third Cycle are focussed on the development of the type of student that El Salvador truly needs.	54%
15.	The new curricula are of more help to the classroom teacher than the curricula of previous years.	77%
16.	The idea of "oriented promotion" is a good innovation for the educational system of El Salvador.	30%
17.	"Oriented promotion" in no way diminishes the quality of Salvadoran education.	36%
18.	Teachers are sufficiently informed about what scholastic evaluation is, so as to be able to implement "oriented promotion" with their students.	24%
19.	The implementation of "oriented promotion" in the classroom is being done by the teachers without any difficulty.	18%
20.	"Oriented promotion" does not, in any way, diminish student interest in their studies.	19%

TABLE 8

Problems with Teaching and with the Educational System:
Percentage of Classroom Teachers Saying
that Problem Is "Very Serious"

Problem	Percentage 1970	1971	1972
1. The financial position of teachers	54%	55%	42%
2. The poverty of students and their surroundings	45%	49%	44%
3. Shortage of teachers with a "vocation for teaching"	34%	29%	35%
4. Lack of teaching material	34%	43%	40%
5. Lack of cooperation from parents	27%	32%	38%
6. Too many students in class	26%	39%	44%
7. The efficiency of the Ministry of Education	22%	27%	23%
8. The method for assigning teachers to schools	21%	35%	31%
9. The guides and workbooks do not arrive on time	14%	29%	28%
10. Administration within the schools	11%	14%	13%
11. Lack of supervision	10%	9%	15%
12. Technical failures in the reception of the teleclasses	8%	15%	12%
13. Student behavior	—	9%	18%

TABLE 9

Problems with Teaching and with the Educational System: Percentage of Classroom Teachers Saying that Problem is "Very Serious" -- New Questions Asked in 1972

Problem	Percentage Saying Problem is "Very Serious"
Lack of desks	50%
Lack of reference materials and learning aids for students	48%
Lack of sufficient communication between Ministry of Education and the teachers	37%
Conditions of the classrooms	26%
Lack of sufficient television receivers	25%
Lack of knowledge of techniques necessary for evaluating student performance	22%
Teleclass quality	12%
Content of student workbooks	9%

Asked at the end of this list of specific problems to name other serious serious problems, teachers listed these:

Lack of resources in the classroom	22%
Lack of coordination among various Ministry entities (e.g., ETV, Supervision, Normal School)	12%
Lack of specification of responsibilities of classroom and TV teachers	11%

TABLE 10

What Has Been the Principal Success of the Educational Reform?
Percentage of 137 Classroom Teachers Volunteering Each
of the Following Answers, in 1972

	Answer	Proportion of Teachers
1.	Improve the quality of teaching	22%
2.	There has been no success	13%
3.	More and better education	11%
4.	Socio-economic advantages for parents in the better education of their children	9%
5.	New curricula	7%
6.	Better coordination between the life of the children and what is taught in school	7%
7.	Retraining of the teachers	5%
8.	Reorganization of the educational system	4%
9.	Educational television	4%
10.	It is very early to evaluate its effectiveness	4%

TABLE 11

What Has Been the Principal Failure of the Educational Reform? Percentage of 137 Classroom Teachers Volunteering Each of the Following Answers, in 1972

Answer	Proportion of Teachers
1. Lack of communication between the Ministry and the classroom teacher	22%
2. Lack of coordination among the principal entities in the Ministry	15%
3. Oriented promotion and the new system of scholastic evaluation	13%
4. An inopportune time to have done the Reform	13%
5. Lack of training for educational personnel	12%
6. Lack of adequate teaching materials	4%
7. Political and ideological interference with teachers	4%

young people ought to have the opportunity to finish Plan Básico -- which is the objective of extending universal free education through grade 9. They give a vote of confidence to the new curricula: 77 per cent say these are of more help to the classroom teacher than previous curricula. The majority of them believe that these curricula are able to turn out the kind of student that El Salvador needs. The "principal success" of the Educational Reform, they say, has been improvement in teaching (although half as many say that the Reform has had no success). Thus, although their satisfaction in their own jobs has generally decreased since the Reform began, still they are generally favorable toward ITV, the new curriculum, and the concept of universal education through Plan Básico.

What, then, is bothering them?

The problems they list as "very serious" (Tables 8, 9) are illuminating. In all previous years the financial position of teachers was the problem listed most often. It is still high on the list (42 per cent call it very serious), but no longer the number one problem. What are the most serious problems of 1972? The lack of desks (50 per cent). The lack of reference materials (48 per cent). Too many students in class (44 per cent). The poverty of students and their surroundings (44 per cent). And just below those: lack of teaching material (40 per cent).

Two of the general attitude responses fit closely with the list of chief problems. A steadily increasing percentage of teachers

has agreed with the statement that "the majority of Plan Básico students are not very interested in learning " (29% in 1970, 33% in 1971, 46% in 1972). A steadily decreasing percentage of teachers has agreed with the statement that "the great majority of students are motivated to take advantage of their education in Plan Básico" (71% in 1970, 47% in 1971, 34% in 1972).

It seems, therefore, that despite the classroom teachers' strong belief in universal education through Plan Básico, they are feeling the pinch of the special requirements made on them by the great increases in enrollment. Most schools are on two shifts; many classes have more than 50 students. Consequently, there is often a shortage of desks, and of study and reference materials. Students in very large classes, scantily equipped with desks and books, taught by weary teachers who have to be responsible for two shifts a day, are not likely to be highly motivated to study hard.

Thus, the problems of coping with greatly increased enrollments and longer working hours must be principal sources of teachers' discouragement with their profession. Another source may be frustration with the new system of grading and promotion -- "oriented promotion" -- which has been introduced widely this year to replace the old practice of basing a student's passing or failing entirely on a single, crucial, teacher-made examination at the end of the school year. Instead of this, teachers are now being asked to evaluate their pupils, as explained in Chapter I, on performance throughout the year, and students are being asked to keep up their studies throughout the

year rather than merely cramming for the final examination. The advantage of the new system of promotion and grading is that the evaluation will no longer depend on a single measure, and the number of repeaters and dropouts should be markedly reduced. The disadvantage, from a teacher's point of view, is that many teachers do not feel confident of their ability to make such a continuing evaluation, and, secondly, that decreasing the importance of the examination may take away some of the students' motivation to study hard and to be attentive and respectful in class, inasmuch as they expect to pass anyway.

The five questions on oriented promotion, in Table 7, do not indicate a high degree of teacher satisfaction with the new method. Only 18 per cent say they can undertake the new kind of evaluation without difficulty. Only 24 per cent feel they know enough about it to put it into use. Less than a third are willing to say that it is a "good innovation," and only about a third are willing to say that it does not diminish the quality of Salvadoran education. Finally, less than one teacher in five says that oriented promotion does not diminish students' interest in their studies. Along with these opinions we should consider the rising percentage of teachers (43% in 1971, 65% in 1972) who say that "many students lack respect for their teachers."

Thus, it may be of considerable importance during the 1973 school year to expand the classroom teachers' understanding of the new system and to give them some help in building the skills it requires of them.

To sum up, the 1972 responses indicate clearly that problems other than the presence of instructional television or the basic ideas of the Reform are behind the teachers' depressed attitudes. There is the old problem of salaries, now no longer seen as the chief problem but still gnawing. There is the problem of swelling enrollments, requiring teachers to work with overcrowded classrooms and to teach two complete shifts of school each day. There is general misunderstanding of the part played by the classroom teacher in the new system of grading and promotion and a sense of being inadequately prepared to use it well. The system is therefore in many cases potentially threatening to the teacher's status in the classroom. And along with all these are the not uncommon difficulties with administration, represented by comments about lack of communication, lack of coordination, late arrival or shortage of materials, methods of assigning teachers to schools, and so forth. Obviously, there were multiple causes, rather than a single one, for the discouragement reflected in some of the responses.

Student Attitudes

Unfortunately, we are unable to compare directly the general attitudes of students in 1972 with those in previous years. In 1969 through 1971, the attitude responses were on a five-point scale. This year the statements were presented on a three-point scale with three answers from which to choose: "yes", "no", or "don't know." It was a regrettable error, the kind that sometimes happens in field

work, but thereis nothing to do about it now. The best comparison we are able to make is between the 1972 eighth and ninth grades. That comparison is in Table 12, which follows.

There is little difference between these two grades. Both are highly favorable to ITV. Three quarters, plus or minus five per cent, feel that (a) they learn more with television then they could without it, (b) classes are more interesting with television than without it, (c) classes with television are no more difficult than classes without it, (d) through ITV they get information they would not receive without it, and (e) their parents are pleased that they receive classes by television. They differ by ten per cent on their estimates of whether their teachers prefer to teach with television: 73 per cent of eighth graders, 63 per cent of ninth graders, think their teachers do prefer classrooms with television. Similarly, the ninth grade students are less likely to consider that there is enough time to ask questions after the TV lesson. Both classes give high ratings to the workbooks (eighth a little higher than ninth, as usual), and 90 per cent say that the classroom teacher is able to clear up any doubts or questions that occur to them during the TV lesson. Then there is the somewhat surprising fear we noted previously: 56 per cent of both classes believe that seeing ITV every day is bad for their eyes.

Students were asked a special question this year in an effort to get more information concerning reasons why some classes, on some occasions, have not been using the ITV lesson. Asked to state the

TABLE 12

Attitudinal Questions Answered by Eighth and Ninth Grade Students in El Salvador at End of 1972 School Year

[Students were given a choice of three responses: Yes, No, or Don't Know. Because the number of Don't Know responses was so small, they are not included in this table. The only question to which any appreciable number answered "Don't Know" was number 13, inquiring whether they felt their teachers preferred to teach with television. 5.1% of the eighth graders, 6.1% of ninth graders, said they did not know.]

Question	8th Grade Yes	8th Grade No	8th Grade N	9th Grade Yes	9th Grade No	9th Grade N
1. Have you heard comments about ETV?	80.4%	19.6%	598	91.9%	8.1%	596
2. Do you think you learn more by means of educational television than could be learned without it?	75.0	24.6	601	71.1	28.6	588
3. Do you think you can understand the class if you are distracted or if there is conversation during a teleclass?	7.0	93.0	603	9.9	90.1	595
4. Do you think classes are more interesting by television than without television?	80.3	19.4	594	75.6	24.2	586
5. Do you think you understand classes with television better than classes without television?	66.3	33.6	593	75.6	24.2	582
6. Do you think that television classes clear up all your doubts about aspects of the subjects you are studying?	53.6	46.4	599	40.0	59.7	588
7. Do you think that classes with television are more difficult than classes without television?	26.5	73.5	597	23.7	76.1	594

TABLE 12, continued

Question	8th Grade Yes	8th Grade No	8th Grade N	9th Grade Yes	9th Grade No	9th Grade N
8. Do you think that through ETV you have the opportunity to obtain information that you could not obtain in any other way?	75.9%	23.3%	601	77.5%	22.4%	590
9. Do you think that seeing television every day in class is bad for your eyes?	56.0	42.8	600	56.0	42.6	620
10. Can you see the teleclasses clearly?	79.3	20.2	599	73.5	24.9	615
11. Do you think that after the teleclass there is sufficient opportunity to ask questions or give opinions?	70.0	30.0	600	62.5	37.3	622
12. Do you think your parents are pleased that you are receiving classes by television?	79.7	17.8	595	77.4	20.0	601
13. Do you think that your teachers prefer to teach with television?	73.4	20.5	575	63.6	31.3	594
14. Do you think that your workbook is truly useful for your studies?	97.0	3.0	604	95.0	4.5	617
15. Do you think that the content of the lessons is well explained in the workbooks?	80.3	19.2	599	74.6	24.2	621
16. Do you think that after the teleclass the classroom teacher clears up any doubts that you had during the teleclass?	91.3	8.4	600	89.8	9.1	618

three most common reasons why they were unable to see a teleclass, they listed the chief reasons in this order:

64% - technical difficulties (current off, receiver not working, etc.)

55% - scheduled class was not broadcast

38% - poor behavior of students was distracting

36% - school had planned other activities for that time

26% - lack of receiver

20% - classroom teacher did not think the class was worth seeing or felt that he was able to teach the topic better than it was taught on TV

10% - the content of the teleclass did not agree with the schedule of content in the classroom

Ratings of the Televised Courses

For three years teachers have been asked to rate the teleclasses on a series of scales designed to record their estimates of the quality and effectiveness of each course. The results appear in the two following tables (13 and 14).

In general, these tables tell a story of the decline and fall of televised Mathematics, which began as the most highly rated course in seventh grade in 1970, and the second most highly rated in the eighth, but in 1972 was firmly at the bottom of the list in all three grades. The top courses have come to be Language and Social Studies.

How do the teacher ratings match student opinions? This year we asked both eighth and ninth grade students to list their

TABLE 13

Classroom Teachers' Ratings of the Teleseries: average ratings of each course across criteria, on a scale of 20 to 100, for 1970, 1971, 1972

		Average Ratings					
Subject	Grade	1970	N	1971	N	1972	N
Mathematics	7th	83	21	77	26	66	18
Science	7th	76	21	70	24	70	16
Social Studies	7th	83	20	76	25	75	17
English	7th	80	18	85	21	80	15
Spanish	7th	83	20	76	23	74	18
Mathematics	8th	78	21	74	18	67	18
Science	8th	73	23	74	20	69	17
Social Studies	8th	73	22	74	18	72	16
English	8th	81	21	74	20	75	18
Spanish	8th	77	24	78	17	75	17
Mathematics	9th			71	19	70	15
Science	9th			69	21	72	18
Social Studies	9th			73	23	82	16
English	9th			79	25	72	15
Spanish	9th			77	22	76	16

TABLE 14

Rank-order of Teachers' Rating of Different Teleseries, 1970, 1971, 1972

	1970	1971	1972
7th grade	Mathematics	English	English
	Social Studies	Mathematics	Social Studies
	Spanish	Social Studies	Spanish
	English	Spanish	Science
	Science	Science	Mathematics
8th grade	English	Spanish	English
	Mathematics	Mathematics	Spanish
	Spanish	Social Studies	Social Studies
	Social Studies	English	Science
	Science	Science	Mathematics
9th grade		English	Social Studies
		Spanish	Spanish
		Social Studies	English
		Mathematics	Science
		Science	Mathematics

favorite and least favored subject. As Table 15 shows, there are interesting differences between student and teacher preferences. Both rate English and Social Studies high, but teachers rate the Spanish class much higher than do students. Students, on the other hand, rate the Science classes relatively higher than do teachers. With both groups Mathematics is the least favored.

The students' rating of English is rather hard to interpret, inasmuch as in both grades it is one of the highest on the favorite list, and one of the top three on the least favored list -- although well behind Mathematics, and, in the ninth grade, well behind Spanish also.

Because we asked the questions of students in non-television as well as television schools, we can make some guesses as to what television is contributing to the popularity of the course. Social Studies and English are highly rated by both TV and non-TV students, although the non-TV group seems to feel more strongly about English than the TV group; English is more often named as favorite subject, and also more often named as least-favored subject, by the non-TV than by the TV students. The differences are not large. Similarly, Mathematics is least favored by both TV and non-TV students, so it may well be that the content of the course, rather than television teaching, is responsible for the low rating. In the case of eighth grade Science, the telecourse clearly contributes to the popularity of the subject. In the case of ninth grade Spanish, it looks as though the telecourse may contribute to its unpopularity with students;

TABLE 15

Most Favored and Least Favored Subjects, Eighth and Ninth Grades, for Students Taught With and Without Television, 1972

Subject	Favorite		Least Favorite	
	TV	Non-TV	TV	Non-TV
Eighth Grade:				
Mathematics	3.8%	8.0%	62.0%	52.0%
Science	25.9	12.6	2.5	2.7
Social Studies	30.4	29.9	2.1	2.7
English	25.7	31.0	16.2	17.3
Spanish	10.4	3.4	7.6	8.0
All	3.7	5.7	9.4	14.7
None	0.2	9.2	0	2.7
Ninth Grade:				
Mathematics	6.0	4.8	44.8	56.9
Science	37.2	35.7	3.2	0.7
Social Studies	26.2	23.8	6.7	3.5
English	24.4	26.8	16.9	23.6
Spanish	3.6	3.0	21.0	4.2
All	1.5	3.0	6.5	10.4
None	1.1	3.0	0.9	0.7

N for TV students = 618; for non-TV = 168

five times as many TV students as non-TV students list it as their least favored course.

Student and teacher course ratings can be compared in another way. Both teachers and students were asked with reference to each course whether they would prefer to have television in all periods, in the same number of periods as present (usually three per week), or in fewer periods than at present. Although each subject per grade level was scheduled in 1972 for two to three 20-minute TV lessons per week, some of them offered more television lessons during certain parts of the year, and therefore, students and teachers were exposed to different amounts of television.

More teachers wanted English telecasts than any other subject in all periods, as will be seen from Table 16. In a sense this is a more reliable judgment than quality ratings, because it represents their estimate of the usefulness of each course. In the case of English, they probably felt the need of an expert English speaker to help them with the drill. About half of them voted for English in all periods, as compared to one out of three who wanted Social Studies and Science in all periods and one out of five who wanted Spanish ever day. But the interesting feature of this table is that very few wanted the amount of television reduced. Even in Mathematics, three-fourths of all the teachers wanted it continued with at least the same number of telecasts. Ninety-one per cent gave the same vote of confidence to Spanish, 95 per cent or more to Science, Social Studies, and English. These results should be truly encouraging to the Ministry and the television section.

TABLE 16

Classroom Teachers' Preferences as to Whether Courses Should Be Taught with More, Fewer, or the Same Number of Periods Devoted to Television, 1972

	All Periods with Television	Same Number as Now	All Periods Without Television
Mathematics	12%	62%	26%
Science	32%	63%	5%
Social Studies	33%	64%	3%
English	33%	64%	3%
Spanish	22%	69%	9%

(N=137, but not all expressed opinions on all courses)

The next two tables are for students answering the same question as was given the teachers -- more television, same as now, or less. These questions were asked over three years, and they confirm what we saw in the preceding tables about the declining popularity of Mathematics. They also confirm the gradual fading of the rosy glow around television. At the beginning of 1971, over 60 per cent of the eighth graders, over 50 per cent of the ninth graders wanted television in every period for every subject. By the end of 1972, that figure had fallen about 10 per cent for Science, Social Studies, and English, considerably more for Spanish and Mathematics. Even so, except in Mathematics a surprisingly small proportion of the students wanted less television than they were getting. About a third of them, in each grade, suggested less mathematics. Many more students than at the earlier period now want to keep the status quo -- the same number of teleclasses as they had been receiving. This, with the corresponding teachers' table, seems to be a vote of confidence in ITV from the users of the product.

Learning and Liking

We can now compare teacher and student ratings of courses with student learning on those same courses. The figures are in Table 19.

There is considerable correspondence between teacher and student ratings, but far less than complete correspondence between liking and learning.

In the eighth grade, the course most liked by students and most

TABLE 17

Amount of Television in Various Subjects Desired by Eighth Grade Students in El Salvador, at Three Different Times from the Beginning of the 1971 School Year to the End of the 1972 School Year

[They were asked to say whether all classes in the subject, the same number as now, or no classes should be taught by television.]

Subject	Beginning 1971 (N=419)	End 1971 (N=435)	End 1972 (N=450)
Mathematics			
all	62.8%	51.1%	26.0%
as now	31.0	34.2	38.3
none	6.2	14.7	35.4
Science			
all	68.0	60.8	56.9
as now	27.2	28.9	39.4
none	4.8	10.3	3.7
Social Studies			
all	68.1	64.9	57.2
as now	26.8	27.8	38.9
none	5.1	7.1	3.9
English			
all	71.0	61.0	56.7
as now	19.2	22.2	30.9
none	9.8	16.7	12.4
Spanish			
all	62.7	58.2	47.4
as now	32.2	31.2	47.8
none	5.0	10.6	4.8

TABLE 18

Amount of Television in Various Subjects Desired by Ninth Grade Students in El Salvador, at Three Different Times from the Beginning of the 1971 School Year to the End of the 1972 School Year

[They were asked to say whether all classes in the subject, the same number as now, or no classes should be taught by television.]

Subject	Beginning 1971 (N=441)	End 1971 (N=441)	End 1972 (N=478)
Mathematics			
all	52.4%	39.7%	18.4%
as now	40.2	45.1	49.0
none	7.4	15.2	32.6
Science			
all	66.9	57.8	44.0
as now	30.6	34.0	50.1
none	2.5	8.2	5.9
Social Studies			
all	61.7	54.4	43.4
as now	35.4	37.9	48.6
none	2.9	7.7	7.8
English			
all	62.6	58.0	48.2
as now	28.8	30.5	36.6
none	8.6	11.6	15.2
Spanish			
all	52.4	45.5	27.4
as now	41.3	42.0	57.7
none	6.3	12.5	14.9

TABLE 19

Data on Teacher and Student Ratings of Courses, and Student Learning from these Courses, 1972

	Average Student Gains		Average Post Score	Teacher Rating	Student Rating ("Most favored" minus "Least favored")	
	TV	Non-TV			TV	Non-TV
8th Grade						
Mathematics	3.25	1.29	19	67	-58	-46
Science	0.07	0.43	22	69	23	10
Social Studies	5.05	3.38	27	72	28	27
9th Grade						
Mathematics	4.96	3.74	22	70	-39	-52
Science	2.79	4.95	28	72	34	35
Social Studies	1.11	1.02	25	82	20	25

highly rated by teachers is also the course from which most was learned in 1972. However, the eighth grade course rated in second place by teachers and second most liked by students was the one from which least -- in fact, very little at all -- was learned. And the one rated lowest by the teachers and most disliked by the students showed quite respectable gains.

In the ninth grade, there was almost a complete reversal. The course (Mathematics) rated lowest by the teachers, liked least by the students, was the one that showed the largest gains in learning. Another course (Science) rated almost as low as Science by the teachers but well liked by the students also showed large gains. The third course, very highly rated by teachers and rated well by students registered only low gains.

It is clear that there is no simple relationship between liking a course and learning from it.

New Data on Career Aspirations

In previous years we have reported studies of the career aspirations of Plan Básico students and noted with some surprise how many of the students were aiming at higher education and professional careers. It appeared that many more were aiming for higher education than the universities could possibly handle, and many fewer were aiming at middle level and technical jobs than it had been hoped the Educational Reform would contribute. This year we tried to answer the question whether these aspirations had changed in two years.

As the following table will show, they have changed, but not in the expected way. They have risen even higher. Over half of this group of students, whose parents on the average have not gone farther than primary school, are aiming at university and graduate study. Many fewer than in 1970 are aiming at the schools for technical and business positions. This may be due in part to the scarcity of places in the Bachillerato Diversificado. In any case, between 1970 and 1972 the number of students hoping to go into university and graduate study almost doubled. Table 20 merits further study in El Salvador because it suggests that probably all these expectations cannot be met, and frustration may lie ahead.

TABLE 20

Aspirations for Further Education of the Same Class of Students, Taught with the Aid of Television, as Seventh Graders in 1970 and as Ninth Graders in 1972

Aspiring to Complete	1970	1972
Plan Básico	6.8%	2.3%
Carera Corta	27.4%	15.0%
Bachillerato	21.8%	28.5%
University	15.3%	23.2%
Graduate Study	27.7%	31.0%
	N = 948	N = 620

IV

AN OBSERVATION STUDY OF TWO CLASSROOMS

[These are preliminary samplings from the report of this study, which is to be published in extenso at a later time.]

Up to this year we have learned more about the general effects of El Salvador's Educational Reform and its related ITV than about the local and individual effects. How does the Reform actually look in the classroom? What impact has it had on the individual lives of Salvadoran children? To fill in some of this information a detailed observational case study was made, during 1972, of two classrooms of seventh grade students -- one in a rural, one in an urban setting -- who used instructional television for the first time during the 1972 school year. The study lasted a year, with the observer making daily visits to the schools and frequent visits to the communities and homes from which the students came. A more detailed account of the study will be published in a later technical report. The following pages are merely a sample.

This was possibly the best year for this type of study because all of the basic features of the Reform were in operation in almost all of the schools at the Plan Básico level: instructional television,

the revised curricula, retrained teachers, the new grading and promotional system, teacher guides based on behavioral objectives, and student workbooks. In 1972 all these elements could be seen in action in the classroom.

Method

From a representative sample of Salvadoran Third Cycle Schools, two seventh grade classrooms closely approximating the typical conditions of Salvadoran schools were selected. Both a rural and an urban classroom were chosen so that the rural/urban dichotomy in Salvadoran education could be analyzed and contrasted. The rural school was 45 minutes driving time from San Salvador and the urban school only ten minutes away.

One principle reason prompted the decision to concentrate the observational study at the seventh grade level. It was suspected that students in the eighth and ninth grades who had used television for some time would already have fixed ideas about it and some other elements of the Reform. The seventh grade students, on the other hand, would be having a totally new experience, and the effects of the instructional media and accompanying elements of instruction could more easily be observed from the beginning. These students would be in the process of developing their own opinions about the over-all school environment and thus make possible a more interesting observational study.

Among the research instruments used for the study were direct

teacher-student classroom observation, in-depth interviews, home visits, sociograms, and written learning and attitudinal tests.

The single, most important step in this study was to have teachers and students accept the observer as part of their daily lives. Teachers were therefore given complete freedom in deciding whether or not to have a total stranger in the classroom during teaching hours, and every effort was made in the classroom not to alter the normal, everyday pattern of the school setting and the individual teacher-student activities. As the year progressed, the observer succeeded in making teachers and students function in her presence much as they would normally function in her absence. A rapport between the three participants was established which resulted in the eventual acceptance of the observer as friend and companion. This friendly relationship led to home visits with family members, invitations to functions in and out of school, and eventually, personal, in-depth interviews with the children, their teachers and parents. Detailed information was gathered about home life, family relationships, socio-economic situation, teacher-student interaction, use of and reactions to televised lessons and workbooks, and peer-group relationships.

Daily recording of classroom occurrences was maintained throughout the year. A separate file was also kept of every student in the sample, containing information collected from personal interviews, home visits, and questionnaires and tests administered during the year. These included

measures of general ability, reading, attitudes toward television, and learning in Math, Science, and Social Studies. This information formed the basis of a daily written and audio-recorded diary which the observer kept throughout the year.

In the following pages, an attempt has been made to sample the year's information to convey what a typical day was like for the children and teachers in the two schools, and to describe the coming of television to one of the schools.

To be as faithful as possible to the occurrences of the year, the observer has developed characterizations for two young students whose likeness is a composite of the children in the sample studied. Through their eyes, the reader will be introduced to a typical day in the urban and the rural schools that participated in the study. The occurrences which make up the day, of course, are taken from many bits and pieces of information collected over the entire school year, and interwoven into the patterns of one typical day in the lives of these children. The observer's visits to other Salvadoran schools prior to and after completing this year-long observational study suggest that days like these are quite typical of most schools in El Salvador.

The Setting

Certain patterns are of particular importance in the events of the typical day, and the reader is alerted to them so that the following accounts can be related to the larger framework of the

Educational Reform program in El Salvador. These include:

1) over-crowded classrooms

2) teachers with double teaching sessions - one in the morning from 7 a.m. until noon and one in the afternoon from 1 - 6 p.m.

3) individual sacrifices that students in El Salvador must make in order to continue studying

4) the wide range in ages (12-22) in the seventh grade level

5) the lack of supplies, desks, materials, and related teaching resources in the school

6) the teacher-to-student relationship and student peer-group interaction

7) qualitative differences in urban-rural education and home life

8) parental involvement in school related matters

9) attitudes toward television and key elements of the Reform

10) students' lax attitude toward their studies

11) the unpreparedness of some teachers to cope with students and the subject matter being taught

12) the inconsistency in the use of new and old teaching styles by classroom teachers

A Day in a Rural School (as seen by a typical but imaginary student)

Having to get up at 4:30 every morning is tiring, but soon you learn to cope with it. I must get up so that I'll have enough time to get some firewood for "mamaíta." Since my father is away during the week and only comes home on weekends, I'm responsible for getting the wood. That way, mamaíta can warm up some milk for me as well as my other six brothers and sisters, plus my three cousins living with us.

Our house is quite small with only two rooms. We have no electricity or running water and the cooking is done outside behind the house in an adobe oven.

Look at this uniform! It's only Wednesday and the uniform is already beginning to look dirty. Unfortunately, that's the only one I have, and it will have to last until the end of the week. I'll wash it then and get it ready for next Monday. I'd better show mamaíta my white shirt this afternoon so that she can mend it because Mr. Moreno* is going to get very angry during the "inspection period."

I must hurry. It's a quarter past five and I have to stop by for Rosa and Hector also. Mamaíta has my warm milk and is apologizing for not having a tortilla. We ate all of them last night. She will go to the mill today to make more "masa," but can't go until later. She gave me a nickle for a snack that should keep me until I come home for "almuerzo." I'm not very hungry this early anyway.

Rosa was ready on time today. She usually gets up late and I have to wait for her, but I told her I wouldn't be waiting any longer. She doesn't like to walk by herself, especially at such an early hour, and decided to be on time. We have been walking together to school for almost six years.

Rosa and I have to walk two kilometers until we come to the foot of the steep mountain. This is where Hector lives with his

*Names of individuals and schools in this account are fictitious.

mother, step-father, and four younger half-brothers and sisters. His stepfather outside is telling him to come home early because he has many chores for him on the "finca." Hector isn't very happy at home and many times makes excuses that he has responsibilities at school.

The three of us don't like walking up this high mountain, but there is no other way. I'm glad about one thing, though; it isn't time for the rainy season yet. If it were, I can imagine how dirty and muddy our shoes would be at this moment. Mamaíta bought me boots this year, but with the understanding that I make them last the whole year. I remember when I was going to grade school I would run out of breath climbing up this mountain; but I'm so used to it now it doesn't bother me that much.

It's a relief to reach the top and come to the paved road. Rosa, Hector and I don't want to spend our snack money for bus fare so maybe we'll have some luck and get a lift from someone. Sometimes we're lucky; if not, we just have to go on walking the three kilometers to school.

Living in town would surely have its advantages. Then we would attend the afternoon classes instead of morning classes. Leaving at this hour in order to get to school at seven and return home at noon is tiring at times; especially at noon when the sun is so hot. Oh well, I'm glad I can go to school. I shouldn't be complaining. I didn't like staying home last year during the teachers' strike. My father didn't allow me to go to classes because he didn't want me

to get involved with any of those "huelguistas" -- the striking teachers. He didn't agree with the teachers' tactics and felt that the teachers would make me repeat the year, anyway, if I didn't agree with their policies. So I stayed at home the last three months of the school year.

Quarter to seven, and the teachers haven't arrived. The schoolhouse is still closed. We'll sit here in the front porch and wait.

Here comes Miss Sánchez, our Math teacher. She is always one of the first teachers to arrive. She'll open the side entrance soon, and we can go to the back corridor. We aren't allowed to go through the teachers' room so we have to wait until the side entrance is opened every morning.

Our school isn't very big. Originally it was a house, but the Ministry has rented the building as a school for fifteen years. It has three rooms joined by a front and back corridor. Directly in back there is another room that we use for review classes or studying when we don't have a class or teacher. The walls are adobe and painted with limestone. They were once blue, then pink, and now white.

All of my "compañeros" have arrived and Miss Sánchez walks toward the back corridor to ring the seven o'clock bell. I'd better hurry and run in to look for a desk or else I'm going to be left standing and may have to go to another room to look for an extra desk. Good, I got here in time and have a desk; but Ricardo and Hector came in too late. They should know better. It's easier when a girl

doesn't have a place to sit; usually the boys are pretty good about offering desks to one of them. Then they have to go look for another desk or remain standing.

Our first class is Spanish, and I wonder if Mr. Moreno is coming to class today. Many times he's late for class or else he remains in the teachers' room. He must have a lot of work to do, since he is our principal as well.

José Antonio came in with a desk and told us Mr. Moreno had just arrived, so we may have class. José Antonio is eighteen and one of the older students in class. He bought the newspaper last weekend and cut out the television schedule and noticed that we weren't scheduled to have a televised lesson, so who knows what we'll be doing in class today.

Mr. Moreno is coming. We all have to stand up and remain silent until he tells us to sit down. He wants to check our workbooks and is going to give us a grade. He is checking for neatness, presentation, and how well we completed the exercises. Gosh, I sure hope he doesn't call on me first. My workbook has a few incomplete exercises so I'd better try to finish them during the time he's checking the others. I'm glad to see I'm not the only one rushing to finish the exercises. Carlos Antonio and José David didn't finish their work either. Neither did María Leticia and Marta Albina. Even Vilma Ruth.

I do hope he doesn't embarrass me in front of the class like he

did Hector Manuel and Ricardo Luis. He got angry because they had written the assignments in pencil instead of pen and also failed to color the illustrations. He doesn't accept any excuses. Class is almost over. Maybe he won't have time to grade my workbook. I hope, I hope, I hope.

As Mr. Moreno goes out to ring the bell for our ten-minute recess all of us quickly gather our papers and workbooks because we must go to another room and again search for a desk.

Each week a class is responsible for getting refreshments and candy from the neighboring little store to sell during recess. This week it's our turn, so Vilma Ruth, Marta Alicia and María Leticia have to run out of class to get the goodies. Whatever extra money is made from the sale is given to Miss Sánchez, who keeps it to buy supplies. If not enough money is collected, then we are to bring chalk and erasers to class. The school does not have enough money to buy these supplies.

It's eight o'clock and time for inspection. I don't especially like this, but we have to do it every morning. All of us have to line up according to grade levels and then we're subdivided into boy and girl groups. The shortest are placed at the front of the line and the others in rising steps behind them. Then Mr. Moreno or the other teachers walk along the rows and check our hair, nails, and shoes. They make sure we are wearing our ties and have a handkerchief. None of the teachers has ever reprimanded me for anything, but sometimes they get very angry with the ninth grade boys because more and more of

them are coming with long hair. In fact, a couple of them were sent home and were not allowed to attend classes until they cut their hair.

Mr. Moreno doesn't have any announcements this morning, so we'll be the first to be dismissed because we're scheduled to have a televised lesson in the next period - Social Studies class.

This is truly my favorite class. Mr. Aguilar is a good teacher. He doesn't care whether or not we sit or stand when he enters the room; in fact, many times he tells us not to stand. He usually comes to class on time and carries a piece of chalk and a booklet which I think is his teachers' guide for the TV classes.

José María is responsible for turning the set on because he's the tallest in class. The lesson doesn't begin until ten minutes past the hour so we only have a clock telling time that's shown on the picture tube. María del Carmen has another responsibility. She is to check roll every morning at this time from a list she gets from the teachers' room. She doesn't call out our names. She simply looks around the room to see who is there and after checking the list, returns it to the teachers' room.

I like this class. I think the subject is interesting, and I like the "telemaestro." He doesn't speak too fast or too slow and we can easily understand everything he is saying. Also Mr. Aguilar helps us at the beginning and the end of class, and many times we work on exercises together after the TV lesson.

The TV music really livens me up in the morning. I don't know the title of this song, but I think it's from the United States. Well, I'd better get my notebook so that I can take notes. Many of my compañeros don't always take notes, but I like to because there are times when the television teacher gives information that we must remember.

This TV class is interesting; it's about products that were made during the Pre-Colombian era. Many of the things they used then we still have in our culture today. Only now we have different ways of producing them. Also, the exchange of money or goods was started during that time. The telemaestro is asking review questions; I bet I can answer all of them. Well, I missed only one.

Mr. Soto, our telemaestro, is waving good-bye. I'm embarrassed to wave back, but other students are doing it. So why can't I? It's getting noisy with all the feet stomping to the music.

Mr. Aguilar says that all of us are going to work on an exercise together for the next twenty minutes, or until the bell rings for recess. We are to copy whatever is written on the board in our notebooks so that we can refer to it later.

We are supposed to make a list of the important industries that existed during the Pre-Colombian era and talk about the products produced during that time. Mr. Aguilar is calling on individual students to contribute an idea. He keeps repeating that

he wants all of us to participate and to stop being so shy. I'm not going to raise my hand until he calls on me, though.

The class is almost over, and we've named five industries along with the products they made. I must quickly copy this in my notebook and make sure I include the right headings.

Ten o'clock, recess time, and the girls must run to the store again. I think I'll go look at one of the maps on the outside wall painted by the ninth graders last year. I like the colors they used, but I don't think they put the Rio Lempa in the correct place. But it must be hard to place all of the rivers correctly on such a large map. El Salvador really looks big in that map.

Science is next, and the bell has already rung for class. I usually fall asleep or at least dose off in this class. It's not because I want to, but sometimes it gets very hot in the room, and I can't keep my eyes open. I think the problem might be because we only have one small shutter-window. Although it's kept open at all times, I don't think enough fresh air comes into the room. The lighting is kind of bad also. In fact, sometimes I get headaches either at this time or a little later. Oh well, there isn't much that can be done, so I'd better go to class.

Mr. Mejía isn't very patient at times. He is five minutes late. He's been quickly gathering some materials for class. We undertake experiments in his class, but not individually. He usually does them because there aren't enough things to go around. We only have one

microscope, and it's so small that sometimes it's very difficult to see the images clearly.

Today he is carrying a flask, a test tube, and a burner he made by using a small jar filled to the middle point with kerosene and a cloth wick. I wonder what he's planning for today.

We are supposed to view a televised lesson. After we see it, Mr. Mejía will tell us what we're supposed to do.

I must admit that I think we behave worse in this class than any other. Most of the older boys sit in the back rows and make wise cracks just to annoy the teacher. At times, he makes us angry, though, with his impatience. Any time we ask a question because we don't understand something he tells us we should have been listening more carefully.

Unfortunately, I didn't understand too much of this class. It was a little boring. My mind was wandering on something else, and I felt very sleepy. Sometimes I wish I could stand up and leave the room for a couple of minutes because it gets so stuffy in here. I'm not the only one who wasn't paying much attention; in fact, about a third of the compañeros don't seem very interested.

The TV lesson is over and now I wonder what we are going to do with the things Mr. Mejía brought to class.

He is filling the test tube with water and has sent Rosa del Carmen to the outdoor faucet for more. He puts a piece of chalk into the test tube and heats the water. He wants us to see the reaction but the test tube is so small it is difficult to see when you are

seated far back. I'm going to move closer. He asked Sonia Elizabeth to tell him what she thought would happen. She played with her hands nervously and couldn't answer his question. So he quickly directed the question to someone else in class. Mr. Mejía didn't give Sonía Elizabeth permission to sit down because she failed to answer the question. He forgot, and the poor girl is still standing after five minutes.

Thank goodness, this class is over. A ten-minute break outside and a breath of fresh air. There isn't much to do so I guess I'll just collect my workbooks and go to the back of the house where we have a study-hall shack. We don't have a television set in this room and this is where we come whenever we don't have a televised lesson to watch. Sometimes when the teacher has another class or is absent, we stay in this room by ourselves. And, although we are supposed to work on homework or workbook assignments, many of us prefer to talk and play around. It breaks the monotony of the morning. I wonder if all schools are this way.

Our next fifty or so minutes will be spent with Miss Sánchez, our Math teacher. She likes to make us work and do a lot of problems. Most of the time it is fun, especially if you know how to work the problems.

She doesn't accept any excuses for being late to class, unless she has given you permission beforehand. She also expects all of us to stand during her entrance. She speaks softly and is generally quiet. But she's nice!

I like the way she teaches because she always asks us whether or not we understand what she or the television teacher have explained. If any of us tell her we don't understand, she gives us more examples and explains it from the very beginning. She also finds out when we don't understand by asking questions individually. If some of us are unable to answer, she reviews again. I like that.

During the class period, we are going to do review problems. Carlos Antonio has been called to work the problem on the board. The rest of us are to work at our desks. When we have completed working the problem, Miss Sánchez comes to our desk or we go to hers and show her our work. If it is incorrect, she tells us to try again. After a couple of minutes, she goes to the board and explains the procedure for working the problems.

Most of us have been having difficulty on the difference between positive and negative numbers. She is good at giving us examples we understand. For negative numbers she tells us about a telephone pole that extends above the ground and has a portion below the ground. Thus, anything above the ground is positive and anything below the ground is negative. She also uses the example of a person walking toward a person as being positive. We can think of someone walking away from a person as negative.

We are to work more problems either at our desks or the blackboard, and Miss Sánchez will check what we do. Time goes by quickly in this class. I guess it's because we're usually busy.

I am beginning to feel tired, but we only have one more class before we're allowed to go home. English is a class that interests me a great deal. I hope that someday I can speak it well and can go to the States.

I must hurry to get a desk. I enjoy sitting in the front row to watch everything that is shown on television. The telemaestro is so funny at times. He behaves like a clown, but he's fun.

Mr. Pineda is writing a list of new vocabulary words that we must copy in our notebooks: farm, farmer, agronomist, tractor, driver, veterinarian, cow, pig, chicken, horse, tall, short, sick, happy, healthy, busy, good, fine, new.

The music has just started, and it's time for English with Mr. Martínez. It looks like he is out on a "finca" with a farmer, and is talking to two men that work on the finca. There's also a cow and it is lying on its side. Mr. Martínez is dressed up like a farmer. He is talking with the two men about the cow that is sick. Now we must listen and repeat certain words and phrases. The cow is kicking, and it almosthit Mr. Martínez. He jumps just in time. That was funny. Well, I think I have learned a couple of new words. Now I know what a finca is called in English -- farm. I hate to say goodbye to Mr. Martínez; most of us in class think he is the nicest and best television teacher. Learning the words to new songs is enjoyable. My favorite song is "Yesterday" by the Beatles. Too bad the class is over. Class activities get a little boring. Our classroom teacher makes us repeat almost the same exercises, and

after a while this isn't much fun. The same routine after every televised lesson makes the rest of the class period so boring. Also, our classroom teacher doesn't always pronounce the words the same way the television teacher does. Sometimes I wonder who is right. Oh well, this is our last class. Time to go home for the day.

When the noon bell rings, all of us must line up along the back corridor. Once we are quiet, one of the teachers will dismiss us.

We are usually out of the school grounds by noon and walk slowly along the pebbled road that leads to the paved street and the way home. Rosa, Hector and I are going to try to get another lift, so we'll walk slowly and hope someone stops for us.

Going downhill is not as hard as coming up in the morning; but it does get very hot at this time of day. I'm usually very hungry and can't wait to get home to get to our "pupusas", fresh tortillas, rice, and beans. When the fruit season is here, we steal some fruit from the trees to help us control our hunger pangs until we get home.

I must complete the exercises in my workbook for tomorrow before it gets too dark. Our house has no electricity. Only the fire, and it doesn't throw enough light. Maybe mamaíta can mend my shirt before I go to bed.

Tomorrow is another school day!

A Day in an Urban School (as seen by a typical but imaginary student)*

Getting up in the morning is really difficult for me. I shouldn't have come in late, last night. Oscar Manuel, José Francisco and I were at the soda place with some of the other guys. Only twenty minutes to get ready, or I'll be late for school. I'll stop by for Oscar Manuel and José Francisco. I'd better hurry or we won't make it. The principal locks the gate if we're later than five minutes. Well, I won't have time for breakfast so I'll take a banana with me. What am I going to wear? These jeans and T-shirt will do. Thank goodness we no longer have to wear uniforms.

My parents have already gone and so has my older brother. All of them work in the capital city. They have to leave about six-thirty every morning to catch the microbus. My mother is working temporarily at a factory, and my father is working in one of the government offices. They won't be home until this evening.

Oscar Manuel and José Francisco live in a "mesón."** Many of the kids live in mesones. They are crowded, but it's fun. Sometimes it gets rough there because you don't have much privacy, and you always have to lock your room for fear of having things stolen. I'm glad we have a small house, where I can do as I please.

Oscar Manuel is one of my best friends and the one guy I look up to. He is older, twenty-two, and has already been in military service.

The three of us found crickets yesterday afternoon and put them

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* Television has not yet come to this school.

** mesón - an old, Spanish type house similar to an inn, subdivided into small one-room apartments. Rooms are joined together by a corridor around a central patio or garden. The separate apartments are rented out to different families, and the tenants share a common bath and washroom.

in a jar. José Francisco kept them for us, and we're going to show them to Mr. Sylvia, our Science teacher.

Ten minutes past seven and they haven't closed the gates. Good. We can get in the building. But we'll still be late for the first class. We have Social Studies and the teacher is usually late anyway, so we won't worry too much about it. In fact, there's Mr. Solis now. He is just going up the stairs. We'll follow behind.

Mr. Solis has forgotten his workbook materials at home, and he has to borrow a workbook from Hilda Alicia. We ask him if he'll allow us to come into the classroom, and he nods his head in approval.

Where can we sit together. There are three desks in the back row. Going through these rows is a mess because there are about sixty desks in this room, and they are so close together you can't help but hit some of the compañeros or push their papers or books on the floor.

There are only about fifty of us in class today. I guess about six others are still late for class. What are we going to do with our crickets? We brought some string, so we'll tie their hind legs and play with them while the teacher decides to start class. I wonder if some of the girls will get scared once they see a cricket in class. These girls talk so much. I sure am glad we don't have to sit next to them. The teachers divided us at the beginning of the year, and all of the girls are required to sit on the left side of the room. We boys sit to the right. Look at those two girls combing their hair, and that one putting on nail polish. I don't know why they have to do everything in class instead of at home.

The class is kind of noisy, me included, and I can't hear what Mr. Solis is saying. He's saying something about yesterday's class. We're supposed to copy some vocabulary words he is going to write on the board. I didn't even bring my notebook; I was so rushed to get out of the house. I'll play with the cricket instead. I'll get the words from someone else later.

Now he wants us to read orally from the workbook, and I haven't bought mine yet. I can't pay for it until my parents get paid next week, so it'll just have to wait. Oscar Manuel has his. I'll look on with him. Virginia Dolores was called to read, but she doesn't have a book either. Her friend, Ana Clara, let Virginia use hers. Who is next to read? I hope it isn't one of us. No. It is Ana Vilma. She doesn't read well at all, and the teacher doesn't even notice because he's writing something on the board. "Bueno, bueno," he says. I don't enjoy hearing other people read.

Our classroom assignment is to draw the map of Central America, which is in our workbooks, and define the words Mr. Solis has listed on the board. Maybe one of the compañeros will lend me a sheet of paper. Then I'll be at least able to do the drawing. Oscar Manuel brought some colored pencils so we'll make ours in different colors. Maybe this will impress Mr. Solis. I don't mind doing this, but I wonder why we have to draw the same map that is already illustrated in the book.

The 7:50 recess bell is ringing, but I'll stay here to finish this map.

At 8:00 we have Physical Education class. I didn't bring my shorts today. Alfredo said I could use his because he wasn't going to play.

A group of us boys walk down to the first level to meet our Physical Education teacher because we can't leave the school premises until he gives us permission. He wants us to wait for the rest of the boys, but we'll get away as soon as he turns his attention to someone else.

We have to walk three blocks behind the school to get to the field, but we do this almost every afternoon when we come to fool around or play "fútbol."

To the left side of the field there is a thatched hut behind which we change. We don't have any dressing rooms so we just take our trousers off here and put on our shorts. Sometimes it can be embarrassing when you are changing and the girls come along. That is why we like to get here sooner, so that they won't see us. Of course, we don't mind watching the girls behind the bushes. Although they all stand in a circle to cover each other up, sometimes we see a lot.

Here comes the group. I wonder what we're going to do today. I usually prefer to play with my friends instead of doing all of those silly warm-up exercises. It is funny to watch the girls when they're doing their exercises because some of them have no coordination and move so awkwardly. Poor girls. I guess it's mainly because they never

have had Physical Education, and they aren't used to that type of exercise.

I like Physical Education during second period because it isn't very warm outside. Oscar Manuel, José Francisco and I enjoy running around the field or watching the girls until the teacher sees us and makes us come back to do the exercises with the rest of the guys.

The teacher is motioning that it is time to return to the school building. Here we go again. We'd better go quickly behind the hut and change into our school clothes now.

We are going to have a race among ourselves and see who gets to school first. Oscar Manuel is usually the best runner.

When we arrive the other students in school are already in the classrooms, so the 8:50 recess is already over. Mr. Torres, "el viejo," is already in the classroom and ready to begin the Math lesson. Would you believe he is over sixty years old? He is ancient. He is seated at his desk with a book in hand. I guess he's reviewing things to discuss today. He talks to himself a lot. He is a nice man, but sometimes I think he is too old to put up with us. Everyone is coming in at different times, and some even went to the snack bar and bought something to eat during Math class. I should have done that, but I guess I will wait for the next recess period.

Everyone talks out loud in this class. And no matter how much "el viejo" tries to keep us quiet, he isn't very successful. He is

still looking at his book. In the meantime, Leonor and Juan Manuel, the officers of the class, are counting the money we collected during our weekend dance as our fund-raising project. We hope to use the money to buy curtains, paint the room, and maybe have enough money left over to build a wooden stand for our television when it arrives. These walls are really dirty, and we can't put any of our work up on the walls or anywhere because the eighth graders that use this room during the afternoon classes destroy everything we leave behind. I wonder what we are going to do about the front door when and if we ever get a television set. It doesn't have a door know so it isn't very safe to have a television set in here.

I sure can't wait until the television comes. I bet it will really help, especially in this class. We have not learned much at all. And since none of us stops "horsing around" long enough to hear what Mr. Torres is saying, we miss a lot of information. But who cares? We are all behind in Math, anyway. I hope the TV set arrives soon. We are the only class during the morning session without a television set. They told us we didn't get one because we are the only seventh graders during this session; the rest of the classes are eighth and ninth graders. They have had television before, so now they have first priority. They need to continue with the use of television.

Mr. Torres is dictating some notes. I'd better borrow a pencil from someone. The notes might be important. This is the first

time I have seen the class so quiet. It's almost like grade school when we took most of our notes from the teacher's dictation. We didn't have any workbooks then, so that was the way we got most of our information for tests.

We are supposed to work those three problems "el viejo" just wrote on the board. I don't know how to do them so I am not going to bother. Oh! We left our crickets out in the field.

It is really getting noisy again. Only a few sitting in the front rows are paying attention to Mr. Torres, and that's because he is looking directly at them.

9:50 - recess and time for a snack. Having a snack bar on the school grounds is nice, especially when you haven't had much to eat in the morning. Oscar Manuel, José Francisco and a few of the other guys are going to the back field for a smoke. I'll join them later. I took one of Dad's cigarettes.

Science will be our next class, and we don't even have our crickets any more. I just had time to drink my soda and the class bell is already ringing. I think I'll wait for the rest of the boys to come back. We try not to be late to Mr. Sylvia's class because we really enjoy that class. He talks about so many things that grownups are afraid to talk about. For the past couple of weeks he has been giving us a course in sex education. At first, especially the guys, everyone was making "bayuncadas," crude remarks. But that didn't last long. He sent us out of class if our behavior

indicated we were not grown-up enough to hear a discussion of this type. It's funny watching the girls get embarrassed, though.

All of us like to crowd around Mr. Sylvia before class. He always has something interesting to say, and he seems to like us because we can talk to him about anything. He will listen and talk to us. He is young and "hang-loose", so he understands us quite well.

For about five minutes the majority of us stand around his desk to talk to him and show what we have brought to class. Some of the compañeros brought a couple of test tubes, and Jaime Alonso brought an animal bone he had found somewhere. Mr. Sylvia thinks it is time to start class so he asks all of us to return to our seats.

This is how he begins class every day:

"How are you class?" he asks.

"Fine," we answer in unison.

"Ready to start class?" he asks again.

"Yes."

Today he asked us to tell him about the topic we discussed yesterday. I seem to remember it was about insecurity and how it affects people. No, it was about diseases and areas of infection. We talked about contaminated areas and the infectious diseases we could get.

We are not going to continue with this topic. First, we will start with a review of the different stages of growth and the

sexual processes which accompany physical growth. We had this some time last week, but maybe he wants to make sure we remember.

He says we are going to have a question and answer contest. He will call on us individually and if we can't answer his question within a few seconds, then he will call on someone else. Everyone is really trying to answer. In fact, everyone is either standing up, snapping their fingers, or calling Mr. Sylvia's name just to have an opportunity to answer. This is fun, but we're going to do it for only about ten minutes. Then we must go to the new topic of the day.

Mr. Sylvia is very artistic on the board; he can draw almost everything. What is he drawing now? The female and male sexual organs. He wants us to draw them in our notebooks and label certain parts. We also have an assignment due next week. Mr. Sylvia put all of us in groups of five, and we are to work together. He put Oscar Manuel, José Francisco and me in the same group. We have to buy a large poster board, and all of us have to donate equal amounts to pay for it. We must draw the sexual organs as he drew them on the board and label the parts. We also have to define the new words listed on the board. We are to divide our responsibilities among ourselves, and all of us will get a grade for it, depending on how well the material is presented. This is the first time I have seen the class so rowdy. Usually in this class everyone behaves well. I suppose most of them don't understand

the assignment so they keep asking Mr. Sylvia to repeat it. He has just announced that he isn't going to answer any more questions. He has lost his temper, and says we're not being respectful to him. Juan Manuel asked him to forgive the class for behaving in such a manner and promises that we will not create any more disturbances.

It is 10:50 and the recess bell has rung. I think I will carry Mr. Sylvia's books for him to his next class. He told me he was disappointed in us today because of our rowdy behavior, and he hopes this is not a frequent occurrence. I reassured him it was never going to happen again.

Mr. Alvarez is our Spanish teacher. Although he is a very good friend of Mr. Sylvia, they are very different. Mr. Sylvia is playful with us most of the time. Mr. Alvarez is serious and quiet. He is nice, though. I can't say that Spanish is my favorite subject, but Mr. Alvarez is a good teacher and makes most of us participate in class.

He is writing six sentences on the board, and we are to copy them on a sheet of paper. He now wants us to find the subjects and verbs of each sentence. That isn't difficult. We did this in grade school. He wants me to go to the board and underline the subject and verb. After completing this, I return to my desk and Mr. Alvarez reviews everything I have written in front of the class. I made one mistake, but that isn't very bad.

Mr. Alvarez now lists a group of words, putting each word under one of three categories: derived words, combined words, and

parasynthetic words. He gives us an explanation of each category, then asks us to place these words under the correct category. Then we have to determine how we would categorize another list he is going to write on the board. We also must look for words in the sentences that were previously on the board and do the same. I think I understand the assignment pretty well, but there are a few students who want to copy off someone else. Once we complete the assignment, he goes over the entire exercise, and we correct our mistakes.

For homework, we are to write ten sentences and underline the subjects and verbs. We are also to indicate which types of words they are -- that is, derived, combined, or parasynthetic. I think I can do all of the assignment in class and turn it in today. No, I guess not. The final bell has just rung.

Oscar Manuel, José Francisco and I plan to go to the soda place now for a cold drink. Maybe later this afternoon we can play futbol with some of the other boys....

The Arrival of Television

This is what happened when television came to the urban seventh grade classroom just described. This class had been without televised instruction for more than two months because of the late arrival of additional TV sets purchased by the Ministry. This delay permitted the observer to compare conditions before and after the arrival of television. The rural school children, on the other hand, had viewed televised lessons since the first day of school.

Two months into the school year, on May 11, the principal announced to the students that a television set would be installed in their classroom the following day. However, the Ministry had requested certain preparations. The one electrical outlet on the back wall of the classroom was too far away. A long extension cord would be needed to connect it to the TV set placed in front of the room. There was also need for a high table under the TV set so that all students could easily view the screen. For safeguarding the TV, a lock would have to be installed on the front door of the classroom.

Everyone seemed anxious to cooperate. Since an extension cord would be too much of an expense for the students, one of the older students, who had been an apprentice at a television and radio repair shop, volunteered to set up the wiring. He would attach the television wires to one of the fluorescent light fixtures at the front of the room. The light had been inoperative for some time because no money was available for light bulbs; this would, therefore, be a logical solution. There was no switch plate. He would have to connect two wires to bring the electrical current through.

The officers of the class asked for suggestions for fund-raising projects to pay for the television table and door lock. Temporarily, they would place the receiver on the teacher's desk.

The students were quite eager to watch television. About two weeks earlier two of them had brought a small portable television

from home, to view the televised lessons. Because the 11-inch screen was too small for all students to be able to see it well, two students picked it up and held it for the entire 20-minute TV lesson. Unfortunately, there was a lot of static and the picture was not very clear. The effort was abandoned.

On May 12 the TV set from the Ministry arrived. The set had been placed in the classroom the night before; the students caught their first glimpse of it as soon as they entered the room. The reactions were varied and enthusiastic. Qué galán! ...Qué chulo!...Qué grande!...Qué bonito!... Some students simply stood in front of the set and stared. Others touched it and one went so far as to put his arms around it lovingly. Another wrote on the board in bold letters, "Do not touch the television set." The rest of the students walked around the room selecting the best seating position to view their first lesson.

The 7:00 bell rang for class, and thus began the new experience with television.

The classroom teacher arrived too late for any preparatory teaching, about two minutes before the televised class was to be transmitted at 7:10. By then the students had connected the wiring for the electrical current and the set was on, but only the face of a clock showed on the tube. The minute hand on the clock reached ten after the hour, the television teacher appeared, and the introductory music began. The music sounded like a traditional or

Pre-Colombian theme. The picture was snowy, and a sigh of disappointment came from the students. The classroom teacher tinkered with the contrast knob and the picture improved. Frowning faces changed to smiles. Instinctively, the students reached for their pencils, notebooks, and workbooks to prepare for notetaking.

The sounds of rustling paper and desk-maneuvering soon gave way to utter silence. Eyes were fixed on the set.

During the lesson, some pupils frantically took notes, while others were bobbing their heads and moving their bodies from left to right, attempting to get a better view because the set was too low for those in back. Out of desperation some decided to sit on the tops of their desks or on books. One of the bolder students simply took his books and walked to the front of the room and sat on the floor directly in front of the set.

The teacher stood against the door throughout the class making no comments. He watched and listened along with the students.

The televised lesson lasted for 20 minutes. It was about the Mayan numerical system. Examples of the complicated number system were shown on the screen as the television teacher explained the significance of each symbol. By the time 15 minutes had gone by in the TV lesson, the students began to get restless. The teacher had to caution some students about moving and standing around the room even before the televised lesson was over.

After the lesson, the classroom teacher told the students he wanted to make some recommendations for future viewing of the televised classes. First, no one was to stand or move about the room because this was distracting. He told the students that it would be best if the shorter ones would sit in front and the tallest in back so as not to get too many heads in the way. Also, 75 per cent of the televised lesson had important facts and information that students should grasp. Thus, they had to listen carefully and concentrate, and not take so many notes, because some important information could be missed. By all means, everyone should be extremely quiet!

He made no further remarks about the televised lesson. There was no "follow-up." Oral reports had been in progress for a week. He asked a group of students to present their reports.

Recess came, and although the students made a few comments about the TV set in class, they did not react to it as a surprise. It was quickly accepted as part of their classroom routine.

In the 8:00 class the followed, there was more active student participation during the television lesson. The first was the immediate enthusiasm when a local "hard rock" Salvadoran band appeared at the beginning of the lesson. The students were thoroughly attentive. Instant energy surged through their bodies as they followed the beat of the song with the stomping of their feet, snapping their fingers, clapping their hands, and mouthing

the words to the song. The television teacher then appeared on the screen, promising more music and fun to the students, but first a discussion on the different parts of a sentence. It was almost like an American TV commercial - "First a word from our sponsor."

This attention-getting technique, along with the active participation of the classroom teacher during the televised lesson, in turn motivated the students to become actively involved in the class. The classroom teacher wrote notes on the board, repeated important definitions along with the television teacher, and answered all questions posed by the television teacher. He coaxed everyone to participate along with him, and they did.

After the 20-minute televised class, he, too, cautioned the students against taking too many notes. He suggested that they listen carefully and write down only the most important aspects of the televised lesson.

In the next period, Mathematics proved neither to be better nor worse because of television. There had been poor classroom participation since the beginning of the year, so the result of having television in class did not make a lot of difference. This had created a generally negative atmosphere toward Math. Pupils generally did not grasp the fundamental concepts and were frustrated and gradually lost interest. Regardless of television, therefore, they were not too motivated to follow the TV class.

The television teacher talked too fast, which didn't help matters. Students who were already having difficulties understanding the basic principles outlined by the classroom teacher became more confused with television.

The Math class with TV became noisier as the minutes passed. The few who were making a sincere effort to grasp some information were given little chance because of the general disorder and noisiness of fellow students. The teacher made every effort to keep the class quiet and tried to make some participate, but wasn't very successful. His repeated requests to be quiet were disregarded. Little was accomplished during the televised lesson or after the 20-minute reinforcement session attempted by the classroom teacher. These students had tuned out Math!

A special teacher's meeting with the principal had been scheduled and neither Science nor English televised classes were viewed by the students on that first day of ITV.

A Preview

Analysis of the classroom observation will be deferred to the more complete report. The following table, based on observation of the urban classroom to which television arrived late, will, however, illustrate the provocative nature of some of the material.

TABLE 21

Student Classroom Performance and Attitudes
Toward Their Classroom Teachers, TV Teachers, and Subject Matter

	Attitude toward TV Teacher	Attitude toward Classroom Teacher	Attitude toward Subject Matter	Group Classroom Performance
English	++	—	—	—
Math	—	—	—	—
Spanish	++	+	—	+
Science	—	++	+	+
Social Studies	+	—	+	+

Key: ++ = very high
+ = high
— = low

The attitudes toward teachers in this table were based on personal interviews in which students were asked to name their favorite classroom teacher and television teacher. Attitudes toward the course were based on questionnaires administered before and after the coming of television. The measures of performance were derived from scores on end-of-year learning tests.

An interesting pattern emerges from this table which might be stated as an hypothesis: two of the three key elements -- teleteacher, classroom teacher, subject matter -- must be highly valued by students if they are to perform well in the classroom.

The year-long observation of classes and close acquaintance with the students makes it possible to interpret results like these with more knowledge than one usually brings to tables. For example, the Mathematics class started with certain drawbacks that increased students' negative feelings. At the beginning of the year, the teacher had demonstrated to the students that he was not totally familiar with the New Math. He enetered the classroom armed with a book and constantly referred to it; this lowered his credibility with the students. Also, the students received their workbooks almost two to three weeks after each teaching unit was begun, and did not have a reference book giving examples of the new concepts and practice drills for them to work. The late arrival of the television set further contributed to the problems with Mathematics. When the set finally arrived, the students were

already behind in scheduled teaching units and had little foundation in the mathematical principles needed to follow the televised lessons. The situation was further aggravated by the rapid and monotonous speech pattern of one of the TV teachers. It didn't take long for the students to become frustrated and lose interest in all aspects of mathematics. Although they had chosen this class as their third favorite at the beginning of the year, they rated it as their least favorite at the end of the year.

Most of the students were enthusiastic about learning English and selected the English TV teacher as their favorite. However, the students performed poorly in this class throughout the year. Several factors seemed to be involved. The classroom teacher was trained in Math and Science, but was given the added responsibility of teaching English. He was not comfortable with the language, and, although he made every possible effort, the student soon became aware of his limitations. Toward the middle of the year, a number of the students began to cut this class, particularly when it was scheduled immediately before the lunch hour. The students who did remain, seemingly out of the strong attraction of the English TV teacher, slowly were discouraged because they lacked the fundamental vocabulary and phrases presented at the beginning of the school year. This disenchantment continued for the rest of the year, but a few students made a sincere effort to learn whatever they could and enjoyed watching the televised lessons.

The classroom Science teacher consciously avoided using television. When a student asked why television was not being used, the Science teacher immediately blamed it on the late arrival of the sets; he said that the class was far behind in the televised lessons and thus needed more background before they could catch up with the same lesson and start viewing TV regularly. The few days he did use the TV classes found him passively sitting in the back rows and listening without making any comments during the broadcast. The students greatly admired and liked him and thoroughly enjoyed his class, with or without televised lessons. He had the students convinced that he could teach the class effectively without the use of television, and they were satisfied. However, it is interesting to note that 53 per cent of the students at the end of the year proposed that all Science classes be with television.

Social Studies class had two factors which contributed to continuing interest - the subject matter and the television teacher. Both the subject and the teacher were selected by the students as one of their favorites. The classroom teacher's authoritative manner was not well-accepted by the students, and they frequently complained about his lack of interest and poor classroom lecture preparation. Regardless of this, they enjoyed their Social Studies class and their responses on the student questionnaire were favorable.

The Spanish teacher made every effort to integrate the televised classes with his classroom activities. He wrote important facts on the board, participated with the television teacher during the broadcast, coaxing students to participate as well. He also integrated the televised lesson with the workbook exercises and other homework activities. The students were most favorable to both the classroom and television teachers in their ratings, selecting both teachers as their second favorites. The students did not consider Spanish as one of their favorite classes, but the teacher's demands and encouragement made it possible for students to perform well in the subject. Fifty-nine per cent of the students proposed viewing all classes with television. Compared to other subjects, Spanish had the highest percentage of students desiring the use of TV for a particular subject.

V

A STUDY OF NINTH GRADE GRADUATES

The Study and Its Purpose

The first group of students to complete grades seven, eight, and nine under the Educational Reform program of El Salvador graduated in November, 1971. The research staff had tested approximately 1,200 of these students throughout their three years of the Third Cycle, beginning in February, 1969, when they started seventh grade.

From late July through mid-September, 1972 (approximately nine months after their graduation), a random sample of 400 of these graduates, stratified by instructional condition (TV, traditional, and control) were interviewed in a follow-up study.

The principal purpose of the study was to gather information on what had happened to the career and educational plans of these graduates, and what role their education under the Reform had played in furthering these plans. Since one of the Reform's objectives was to provide middle-level manpower for the country's development by directing these graduates to technical studies in the Bachilleratos

Diversificados, there was a keen interest in the types of activities in which this first group of graduates would be involved.

Data-Collection Procedures

After trials of different strategies for obtaining the necessary research information and tracking down the sample of 400 graduates (e.g., mailing questionnaires, contacting school officials or relatives, newspaper ads, etc.) the personal interview method was selected as most feasible. An experienced staff of Salvadorans trained in interviewing techniques and knowledgeable about the geography of the country set out to interview the graduates, armed with a list of names and last-known addresses. The addresses had been provided by the students on attitude questionnaires administered to them at the end of the 1971 school year, shortly before their graduation.

Tracking down the graduates proved to be the most demanding phase of the study. Many students either had given partial and incorrect addresses or had relocated in other towns and cities to seek out a source of livelihood or continue their studies. Their whereabouts often were unknown. Likewise, many families had relocated and neighbors could not provide any clues as to their new location.

School officials at the respective schools where students had finished their Third Cycle proved to be of invaluable assistance in locating graduates who returned from time to time to visit the school and/or had younger relatives attending the school who could

relay messages to the graduates. This informal network proved to be the best means of locating the majority of the sample.

Of the total 400 graduates in the sample, 392 were finally interviewed. The students generally were most cooperative with the interviewers and welcomed the opportunity to talk about their career and educational plans, the difficulties they foresaw in fulfilling them, and general impressions and recollections about their three years of schooling under the Reform. Many graduates came to the scheduled interviews in the hope that the research staff could help them find part-time jobs or gain admission to the school of their choice at the Bachillerato level. This occurrence, and the fact that there are many more students wanting to continue their studies than can presently be absorbed at the Bachillerato level, is symptomatic of the lack of opportunity which faces many of the graduates. In 1972, enrollment in the various Bachillerato programs was limited, and in some instances (e.g., the Bachillerato Pedagógico), there were as many as 400 applicants competing for the less than 40 openings in the program's enrollment quota.

The Interview

The interview was 30 minutes in length and consisted of two parts. The first part was a series of brief screening questions which helped the interviewer learn whether the student was studying, working, doing both, or doing neither.

Once a student was identified as being in one of the four possible categories, he was asked to answer a set of questions appropriate to the activities in which he was involved. This second part of the interview gathered detailed information on the particular nature of a student's activities, his reasons for undertaking them, future work or study plans, and retrospective impressions of his three years in Third Cycle.

The more salient findings relevant to what the graduates were doing will be reported in this chapter, with particular attention being given to those graduates who continued their education. A more detailed treatment of these results, the graduates' impressions of their Third Cycle education and the pattern of responses of those few graduates who entered the labor force or were in the category of "neither studying nor working," will be in a forthcoming special report on the study.

Student Characteristics

The graduates in the sample came from 34 different Third Cycle schools throughout the country. Fifty-five per cent were boys, 45 per cent, girls. The age span was 15 to 23 years, with 36 per cent in the range of 15 to 16 years and 19 per cent 19 years old or older. About three-quarters came from families where the father's occupation required less than primary school education. Thirty-seven per cent came from fatherless households, and 21 per cent were motherless.

Sixty-three per cent of the graduates previously had been in TV classes; 13 per cent in control and 24 per cent in traditional.

What were the graduates doing?

Of the 392 graduates interviewed, 86 per cent were continuing their education, as Table 22 indicates.

TABLE 22

Percentage of Graduates Involved in Different Activities (N=392)

Studying	86%	(N=336)
Studying and working	4%	(N=15)
Only working	4%	(N=16)
Neither working nor studying	6%	(N=25)

There was virtually no difference between graduates of TV, control, or traditional classes in the percentage continuing with their education. Eighty-five percent in each group were studying.

Table 23 indicates that there was a slightly higher proportion of girls than boys continuing their education. However, when the "studying and working part-time" group is added to the "studying only" group, the proportions of boys and girls involved in some type of study activity are about equal.

TABLE 23

Percentages of Graduates Studying, by Sex
(N=392)

	Boys	Girls
Studying	82%	90%
Studying and working	6%	2%
Only working	5%	3%
Neither working nor studying	7%	5%

There was a significantly lower proportion of graduates in the "full-time student" category and a greater proportion of graduates who were "neither studying nor working" from the rural areas (see Table 24).

TABLE 24

Distribution of Activities in which Graduates were involved
By Level of Urbanism (Percentages)
(N=392)

	San Salvador	Other Large Cities & Towns	Med.Cities & Towns	Small Towns & Villages
Studying	88%	90%	90%	77%
Studying and working	4	2	6	4
Only working	6	3	1	6
Neither working nor studying	2	5	3	13

A lower proportion of older students than of younger ones were studying full-time (see Table 25), and a higher proportion of the older students were "only working."

TABLE 25

Age Differences Among Graduates in Various Activities
(N=392)

	15-16 Yrs.	17	18	19 & older
Studying	96%	81%	81%	76%
Studying and working	2	5	2	10
Only working	--	3	9	7
Neither working nor studying	2	11	8	7

A larger proportion of graduates from middle and upper socio-economic levels were studying (see Table 26).

TABLE 26

Distribution of Graduates Involved in Various Activities, According to Father's Occupation (Percentages)
(N=392)

	Low Level	Middle Level	Upper Level
Studying	84%	96%	96%
Studying and working	4	--	--
Only working	4	2	2
Neither working nor studying	8	2	2

Graduates Continuing Their Education

Of the 336 graduates continuing their education, about half were able to enroll in a Bachillerato in the same city or town where they finished their Third Cycle education, but the other 50 per cent either had to commute to other cities and towns on a daily basis (26%) or had to establish their residences in new locations (24%).

About 50 per cent of the graduates who were continuing with their education followed the Academic Bachillerato (the most conventional choice), with a proportionately larger number of traditional, rather than TV or control, graduates choosing this option (see Table 27). Thirty-one per cent of the graduates continuing their education were studying commercial or business administration careers (Bachillerato Comercial and Carrera Corta); eight per cent were in the industrial bachillerato; and about 11 per cent were dispersed among the various new bachilleratos (e.g., agriculture, fishing and navigation, hygiene and health, hotel and tourism, teacher training, fine arts, etc.).

TABLE 27

Distribution of Graduates Among Different Bachillerato Programs (Percentages) (N=336)

	Academic Program	Com. or Bus. Administration	Industrial	Others Others
Total	50%	31%	8%	11%
Students who were in TV classes	52	24	5	19
Students from control classes	48	23	4	25
Students from traditional classes	62	18	6	14

What Motivated Graduates to Continue Their Education?

Four predominant goals, not unrelated, motivated the ninth-grade graduates to continue their studies. They either aspired to (1) undertake university studies; (2) better their chances for a good job; (3) improve their over-all knowledge; or (4) earn a degree or title. Table 28 presents the reasons they gave.

TABLE 28

Reasons Graduates Gave for Continuing Their Education
(in percentages)
(N=336)

1.	Aspirations for university studies	35%
2.	Better one's chances for a good job	32
3.	Improve one's general knowledge	27
4.	Obtain academic degree or title	21
5.	Better adapt to the changing times	11
6.	Secure prestige and status associated with education	10
7.	Better prepare oneself for the role of parenthood	9
8.	Earn more money	4

Tentative Conclusions and Implications

This preliminary analysis of the research data collected for the ninth grade follow-up study has presented a series of interesting patterns with much "food for thought." The tentative findings suggest that the

Reform is at least to some extent achieving its objective its objective of stimulating more students into the diversified technical careers at the Bachillerato level. Judging from the large number of students in the Bachillerato Académico, there appears to be a need, however, to provide systematic counseling and career guidance which can direct students to alternative Bachillerato programs. There also appears to be a need for broadening enrollment opportunities in the various Bachillerato Diversificados in accordance with an analysis of the labor market.

The 50/50 percentage split between graduates who were able to continue their education in the same place where they finished ninth grade and those graduates who were forced to commute to other towns and cities or establish their residences in new locations suggests an urban migration pattern which could affect the development of rural areas and further aggravate overcrowded conditions in urban areas.

Also, the lower proportion of graduates from the rural areas in the "full-time student" category and the higher proportion in the "neither studying nor working" category may suggest an inequality of educational opportunities for the rural student. The fact that a larger proportion of older students are working instead of studying suggests that economic limitations and/or family responsibilities may be preventing a number of these older students from continuing their education.

Because this first group of graduates was studied only nine months after their graduation, all findings must be taken as tentative and preliminary.

VI

FORMATIVE EVALUATION

An educational project must constantly evaluate new materials and methods to make them better than those already in existence. Presumably, the new materials are field-tested while they are being developed. When the materials are put to wide use, "feedback" comes from the classroom, on the basis of which further revisions are made. These kinds of measures are what we mean by formative evaluation.

Evaluation in this sense is not necessarily research information which can be generalized to other settings or situations. Instead, it becomes an aspect of the administrative functions of a project, where the concern is the identification of weaknesses in the system and the development of specific corrective action. Thus, formative evaluation can be a true "change agent" in the instructional system, for it generates information which can be used immediately by the decision-makers to modify the system until the desired efficiency is achieved.

Flanagan, Cronbach, and others have called formative evaluation a more powerful tool of educational improvement than evaluation used

to appraise a product already placed on the market and in regular use. The latter is known as summative evaluation.

Educational projects of any magnitude, however, must attempt to make the best use of both types of evaluation. For while formative evaluation is continuous in nature and serves to refine and optimize the program's design through iterative feedback, summative evaluation provides final judgment concerning the degree to which over-all program objectives have been accomplished.

The instructional television system of El Salvador has worked with both formative and summative evaluation. Evaluation began in 1969 with an approach that was primarily summative in nature, but development in 1970 of a feedback system of testing at the end of selected televised teaching units and the introduction of the pre-testing of individual television lessons in 1972 represent an increasing concern for formative evaluation to complement the continuing summative approach.

The Feedback System

In the 1970 school year, the research team experimented with a method* for obtaining rapid "feedback" on how much students had learned from a given unit of a televised course. Tests were made, pre-tested, and administered over television near the end of a given unit of the

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* Ana Maria M. de Manzano, Robert C. Hornik, and John K. Mayo. "Feedback" on Student Learning for Instructional Television in El Salvador. (Research Report No. 6, February 1971). Stanford, Calif.: Institute for Communication Research, Stanford University.

course, and the results were reported to the TV production teams in time to permit the preparation of special review or remedial broadcasts. The method worked well in two courses, and in 1971 it was expanded to cover more courses and more teaching units.

The 1972 school year saw the further expansion of the feedback system to all three grades of the Third Cycle (seventh, eighth, and ninth) in selected teaching units of the five subject areas being televised (Mathematics, Science, Social Studies, Spanish, and English). The tests used in the feedback system in 1972 also benefitted from the use of behavioral objectives and the Bloom taxonomy.

The responses of students taking the TV unit tests, in a representative sample of about 15 classrooms across the country, were collected and analyzed in a matter of 48 hours. The results were communicated to the respective television teaching teams, who, if they felt it necessary, recorded a review lesson emphasizing the behavioral objectives that had not been adequately mastered.

Another change in the "feedback system" was the participation of the utilization-supervisory personnel in the application and analysis of the televised tests so that the results could also be used as a diagnostic instrument in schools under their responsibility. It often happened that certain classes experienced difficulties which were not common across the entire student viewing audience; therefore, the special emphasis or review via television was not totally appropriate to their needs. Supervisory staff provided individual attention to those classes and helped the classroom teacher diagnose

why particular objectives were not fulfilled by his students and plan appropriate remedial action. Formative evaluation, therefore, entered the classroom. In this manner, the taxonomy of learning behaviors and the use of behavioral objectives provided a direct link throughout most of the school year among the principal elements of the Reform: TV program designers, teachers and students, evaluation, and supervision and utilization. Also, at the end of the year, the evaluation staff at educational television had a bank of test items with a determined level of discrimination and difficulty. From this pool, items could be selected for the following year's feedback research.

In many respects the situation in El Salvador has been ideal for the development of this learning feedback system. The country is small and its population is highly concentrated. The farthest school from the television studios is no more than three hours' journey by car, and except for brief periods in the rainy season, the roads generally are quite good.

Considering the number of different people and talent that have had to be coordinated, this feedback system has proved easy to administer. The construction of the televised tests continues to be the most time-consuming step, for it demands a range of highly specialized skills which are still in rather short supply in El Salvador.

Pre-testing Prototype ITV Lessons and Modules

The second use of formative evaluation in El Salvador during the 1972 school year was for pre-testing* television lessons and individual modules of taped material organized in alternative ways. A portable one-inch videotape recorder, which could be transported to schools throughout the country or used in a simulated classroom setting at the TV studio, facilitated this type of research.

One of the most pressing problems facing ITV wherever it is used is the development of appropriate means to assess the teaching effectiveness of individual telelessons, prior to their formal airing. Reactions and judgments of the ETV producer and the studio teacher when taping the program, or reactions from the classroom teacher and students at the first airing of the program, do not entirely meet the need, on the one hand, for systematic, objective information on teaching effectiveness and, on the other, for such information before an individual telelesson is committed to final form. What is needed, therefore, is a system for pilot testing individual ITV lessons and obtaining objective "feedback." Pre-testing is an attempt to create such a system.

Ideally, every ITV program should be tested on a representative sample of the intended student audience before it is broadcast to the entire school system. However, pre-testing and revision are

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* For a more detailed discussion of the concept of pre-testing and televised instruction, see Wilbur Schramm. "Feedback" for Instructional Television. (Research Memorandum No. 3, December 1969). Stanford, Calif.: Institute for Communication Research, Stanford University.

expensive and time consuming. Therefore, the strategy of testing a few prototype lessons is being used in El Salvador. The lessons selected are sufficiently representative, so that the results of testing them will throw light on the way an entire televised series should be taught. Here again, on matters relating to teaching variables, behavioral objectives and the taxonomy have played an important role. For it is necessary to have a clear statement of precisely what a particular TV lesson is expected to teach, so that tests can be developed for these objectives, which serve as criteria of teaching effectiveness.

The pre-testing activities are still in an experimental stage in El Salvador, but the strategy continues to generate a great deal of investigation into appropriate production and instructional techniques for televised instruction.

Pre-testing in 1972 primarily concentrated on specifying basic dimensions of a telelesson that could be tested and evaluated. Three major areas were pinpointed: visual appeal, comprehension, and learning.

The pre-testing research evolved from three basic questions asked often by ITV personnel:

1. How do we know that a lesson has fulfilled its proposed objectives?

2. How can we tell if children have understood or comprehended a lesson's content?

3. How do we know that a lesson catches the student's attention and is visually appealing and enjoyable to him?

Pedagogical and production personnel at ITV-El Salvador were keenly aware that before the lesson could teach the child, it had to reach him, catch his attention, and win him over.

With the advisory assistance of research personnel from Sesame Street in New York, and from the Stanford field staff, the ITV personnel experimented with the development of appropriate measures to answer the three questions and to develop confidence in the pre-testing technique among the members of the TV production teams.

A formative research staff was organized to service the production teams. The first priority proved to be one of familiarity. The research staff, not being acquainted with all the problems of production and instructional design, found it difficult to specify which production or content learning variables should be studied to get at the key questions. The production teams, on the other hand, not being familiar with research and measurement methods, neither knew what kinds of information the formative research staff could provide, nor how to interpret and utilize research results. What ensued in the six months of experimentation (July to December, 1972) was a relationship in which terms like "pan," "dolly," "close-up," "full-shot," "fade in,""fade out," "superimpose," "action," "child-centered," "pre-entering behavior," "learning conditions," etc., became familiar words in the researchers' vocabulary and the production teams began asking about the level of "difficulty" and "discrimination" of a particular test item, the appeal curve, or

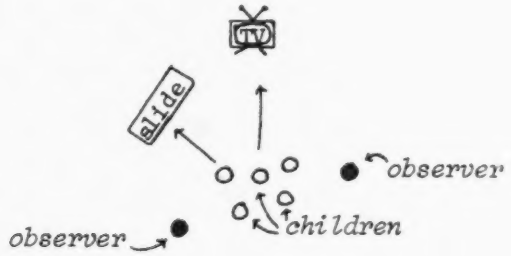
the percentage of children answering a particular test item. Pre-testing, therefore, opened a direct line of constant communication between the research and production staff at ITV-El Salvador.

Experimentation on Testing for Visual Appeal of a Lesson

Borrowing from the vast storehouse of information which Sesame Street provided, a distractor method similar to that used at the Children's Television Workshop was used to measure visual appeal. "Eyes on the TV set" was the dependent variable. For purposes of experimentation, a typical classroom setting was simulated at the ITV studios in Santa Tecla. A TV receiver was installed in a setting similar to that of a regular classroom. Random samples of selected students in groups of five at a time were brought to the simulated classroom to view television lessons. A carousel slide projector housed in a rear-screen projection box was installed to the right of the TV receiver, forming about a 45 degree angle, with the children as the focal point (see figure below). A random selection of color slides depicting animals, objects, people, foods, different geographic locations, unusual camera angles, etc., were inserted in the carousel tray and then projected automatically, at regular intervals, onto a screen similar in size to that of the TV receiver.

Two observers sat with children on their right and left. The children sat in desks about ten feet from the receiver. The observers were equipped with a diagram of the seating arrangement,

and each child was assigned a number on the diagram, which the observers memorized and used in rating the students during the experiment.



When the children would first arrive at the television studios, the observers would greet them and take them on a tour of the premises in order to relax them and establish friendly rapport.

The 20-minute lesson to be viewed was divided into modules of one minute each, and every time there was a change in the module on the screen, the slide would change in the carousel. Each slide remained exposed for the duration of the module. The projector emitted a very distant clicking sound each time the slide changed, so that the children would know that a new slide was coming on.

Each observer was provided with a sheet listing the 20 one-minute modules and five blank spaces by the side of each module-listing, so that he could record when a particular child's eyes left the TV screen and when they returned. From this data, it was possible to determine what portion of each one-minute interval each child's eyes were on the television set. Using the rating

system employed by the Sesame Street research staff, the child was assigned a score of 3 for an interval if his eyes never left the set; 2 if they were on the set more than half of the one-minute interval; 1 if less than half; and 0 if the child's eyes were never on the TV. The distractors were so programmed that every group of five children viewing the program would be subject to the same distraction at the same point in the lesson. The experiment was conducted an average of five times with different groups of five children, and cumulative graphs were constructed showing the attention fluctuation of the various groups of children for each one-minute module of the lesson being tested. Since the children were randomly selected from the general sample being used for the national testing program, attitudinal, learning, and socio-economic data on each child were available to help the research staff in interpreting the results. In the initial experimentation with pre-testing, these background data were not used, but in the future they could help to refine the pre-testing system so as to identify which learning strategies work best with particular types of students. This initial experimentation with pre-testing primarily focused on the number of times a particular appeal pattern was repeated with the different groups of children.

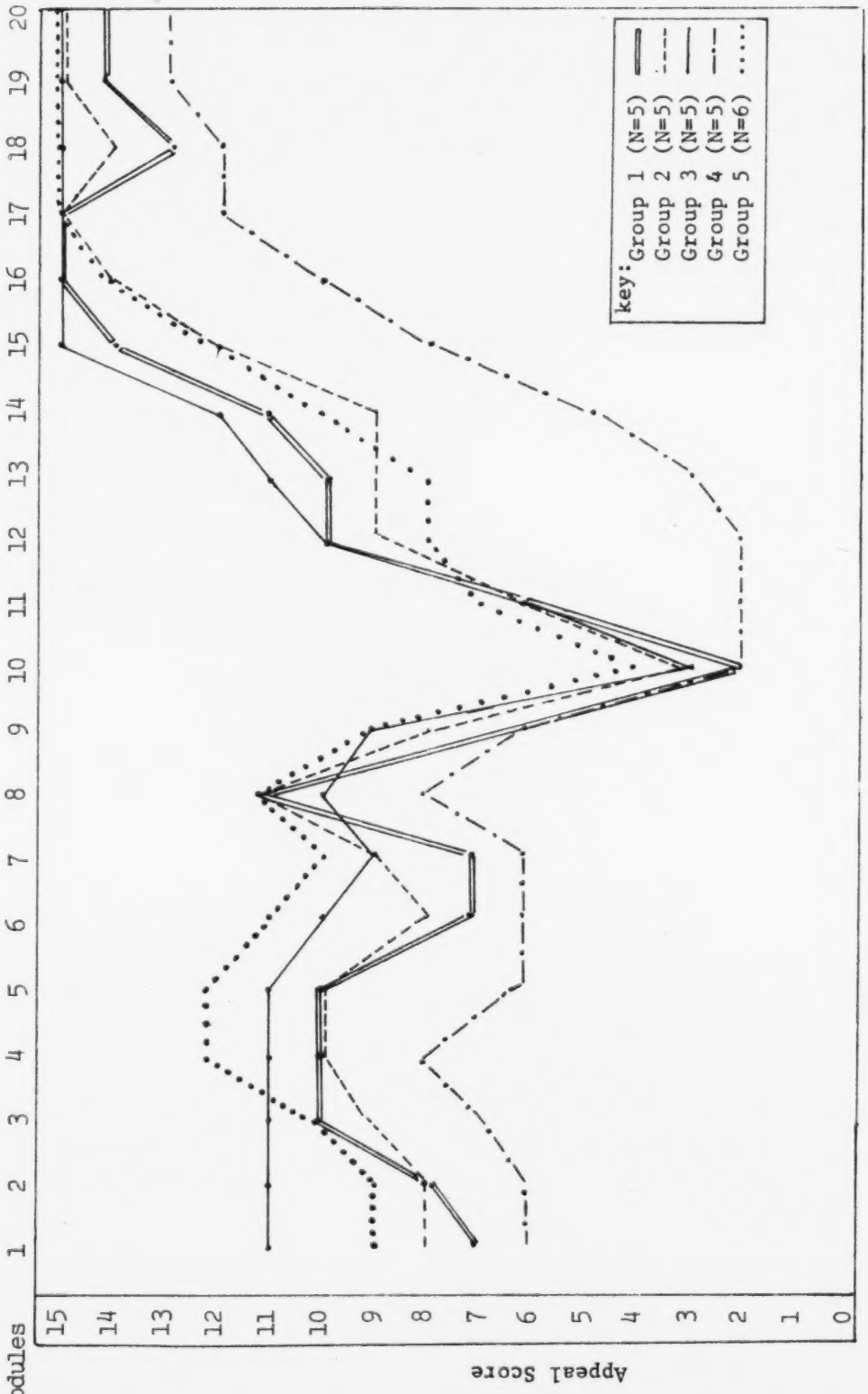
High appeal for a particular module was rated on a scale of 15 (five children viewing the screen with a score of 3 -- that is, their eyes never left the TV set). Consistent rating patterns

generally developed for each module with the various groups of children viewing the programs. This permitted the researchers to conclude that a certain module was high or low in visual appeal. If the majority of the children turned their vision from the TV screen repeatedly at a particular module, it was concluded that the module was low in visual appeal. At the same time, it was possible to pinpoint which particular slide had distracted the children's attention and thereby suggest to the TV production teams that they might try, in future TV lessons or modules, visual objects or camera angles of the same type as the slide.

The TV production teams and the formative research staff would follow the cumulative graphs of viewer attention while they replayed the experimental production, noting at which points attention was high or low and therefore which segments required revisualization. An example of a cumulative graph prepared at the conclusion of a distractor study of a 20-minute, seventh grade English TV lesson entitled "They Are Our Friends" appears in Figure 3. In segments 15, 16, and 17 of the cumulative graph, prepared from the results of five groups of five children viewing the lesson, there is an example of high appeal: eyes glued to the TV receiver. The script for these modules indicates that during this time the TV camera was on a tight close-up of the TV teacher's mouth and lips as he silently pronounced the new words the students were being asked to

Figure 3

Visual Appeal
"They are our friends" (7th grade English)



learn. In module number 19-20, the TV screen visualized the characters of a popular Beatles' song. This also was high in appeal for the children. In sequence 10, however, the TV screen was dominated by a list of words on a blackboard; the children's attention quickly waned, and their eyes shifted to the slide where a picture of an erupting volcano was being shown. Module 10 was, therefore, not visually appealing and became a candidate for revision or deletion.

At the end of each viewing session the children were asked to list which slides or things in the TV lesson they remembered. In the experiment with the English lesson, the children could list practically all of the slides, but very few of the scenes in the English lesson, other than the Beatles' song. And when asked by the observers to sing the song, only two students of the 25 that were tested could give the words and the melody. This lack of remembrance was taken as another possible measure of visual appeal.

Another technique was to ask the children if they wanted to view the lesson again. The number of times the child willingly sat through a repeated viewing of a program was taken as an indication of the program's over-all appeal.

How Comprehension was Measured

Experimentation with measures of comprehension or understanding of lesson content led to the development of a technique whereby children were permitted to view a program in its entirety

with both audio and video channels in operation. They then were shown the same program a second time without the audio, and the observers would stop the videotape at specified points in the lesson and ask the children to explain in their own words what was happening. Or the observers would ask the children to explain a certain relationship or concept that was being discussed in the lesson.

In the English lesson we have mentioned, a basic concept involved the use of the appropriate demonstrative pronouns for indicating proximity to an object, e.g., "these/those" and "that/this." About 60 per cent (15) of the children asked to explain the difference between these pronouns were unable to do so.

Measuring Achievement of the Lesson's Objectives

Simple written pre and post tests were administered to the children before and after viewing a TV lesson to see if the lesson's objectives were fulfilled.

The test items were based on the specific behavioral objectives which the TV production teams had specified. Normally, a 70 per cent mastery of an objective by 70 per cent of the children was taken as an indication that the objective was fairly well fulfilled.

In the same English lesson under study, one of the objectives advanced was the following:

"At the end of the TV lesson, the child will be able to correctly employ 'this' and 'that' in seven of the following ten examples."

Nearly 80 per cent of the children could provide the appropriate response in no more than four out of the ten sentences. One concludes that the objective was not fulfilled. The TV production team would have to go back to the "drawing board." Interestingly enough, although the lesson was not primarily designed for teaching vocabulary, this was what most students learned best.

Summary

It can be said that 1972 was only an experimental tryout for pre-testing, and much more work is needed to develop appropriate measurement techniques and the specification of appropriate variables for study. Several reasons prevented the more systematic use of pre-testing in 1972:

1. the late arrival of the portable videotape recording equipment (midway through the 1972 school year) and the difficulties in clearing it through customs in El Salvador;

2. mechanical failures with the equipment when it was first used and long delays in securing repair parts from the United States;

3. time involved in persuading the ETV personnel of the usefulness of pre-testing to answer certain questions about the quality of televised instruction;

4. heavy production schedules of the ETV production teams, which left little time for pre-broadcast experimentation;

5. time involved in training personnel in the use of the portable videotape recorder and the development of appropriate measurement techniques;

6. differences in opinion among the formative research staff as to how pre-testing should be introduced and proceed.

By the end of the 1972 school year, however, pre-testing had been accepted as a useful evaluation strategy, despite the time and effort required to use it.

When the Stanford research team left, portable videotape equipment was donated to the El Salvador ETV Evaluation Unit with the expectation that the experience gained in 1972 would help establish pre-testing as a research technique for improving the quality of televised instruction in future years.

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by the fourth-year Stanford field team

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This report is dedicated to them and to the children and teachers of the schools where we undertook our research studies and in whose company we spent some of our happiest moments in El Salvador.

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